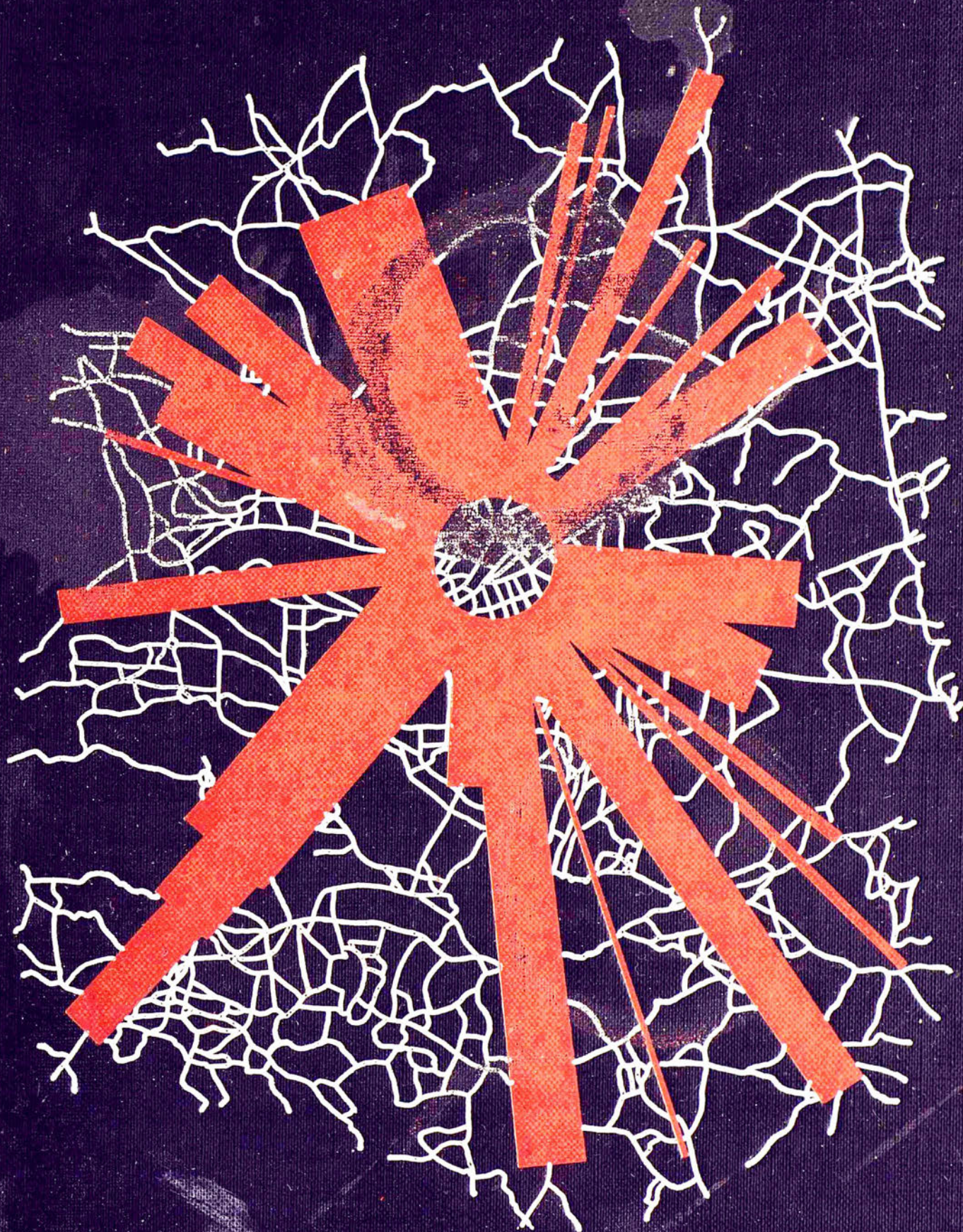


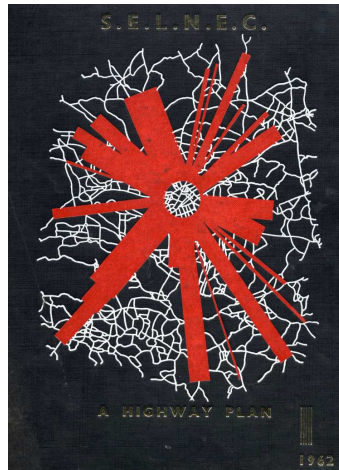
S.E.L.N.E.C.



A HIGHWAY PLAN



1962



SELNEC : A Highway Plan 1962

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S. E. L. N. E. C.

A HIGHWAY PLAN 1962

At a Conference in 1910, Councillor Marr of the Manchester City Council said:

“The problem which we have at the present time is how to adapt the resources of our modern civilisation to an environment which has been produced by our old civilisation. The fact is that we have an old centre through which we are trying to drive our modern tramcars and so on, and we find that it is impossible to do it. We have to cut and carve and rearrange things. If we intend to develop the outskirts of our towns simply to suit the conditions of the present day, surely we are likely to be in 50 or 100 years faced with a series of problems which will be just as difficult of solution then as our present ones are for us.”

Plate I



S. E. L. N. E. C. A HIGHWAY PLAN 1962

PREPARED BY THE

SOUTH-EAST LANCASHIRE AND NORTH-EAST CHESHIRE AREA
HIGHWAY ENGINEERING COMMITTEE

ROY PINCHES
71 TINTERN AVENUE
ASTLEY
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S. E. L. N. E. C.

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The Cement and Concrete Association; Fox Photos Ltd; G. Maunsell and Partners Ltd; the Automatic Telephone and Electric Co., Ltd.

Plans based upon Ordnance Survey maps are reproduced with the sanction of the Controller of H.M. Stationery Office.

FOLLOWING A MEETING of the Clerks and Surveyors to the County and County Borough Highway Authorities in South East Lancashire and North East Cheshire, the Divisional Road Engineer (North Western) of the Ministry of Transport suggested in November, 1958, that, as a first step towards the formulation of a long-term highway programme for classified roads, the problems involved should be examined by a Committee consisting of the Surveyors. This course was agreed by each of the Authorities. [1]

It was further suggested that a list of improvements to existing roads and of new roads should be produced which could be related to alternative programmes representing an annual average rate of grant expenditure of £2½ million and £4 million respectively. [2]

This report describes both the manner in which the problems have been examined by the Committee and the proposals they suggest as a solution. It has been produced for the consideration of the Highway Authorities concerned, so that it might enable them to acquaint the Minister of Transport with their views on the highway programme which they consider is required, the adequacy of the suggested annual average rates of grant expenditure, and such priorities as they may consider appropriate. [3]

Existing and potential trunk roads necessarily constitute an important part of the present and proposed main road system and have therefore been taken into due account. The provision, maintenance and improvement of trunk roads are, however, the responsibility of the Minister of

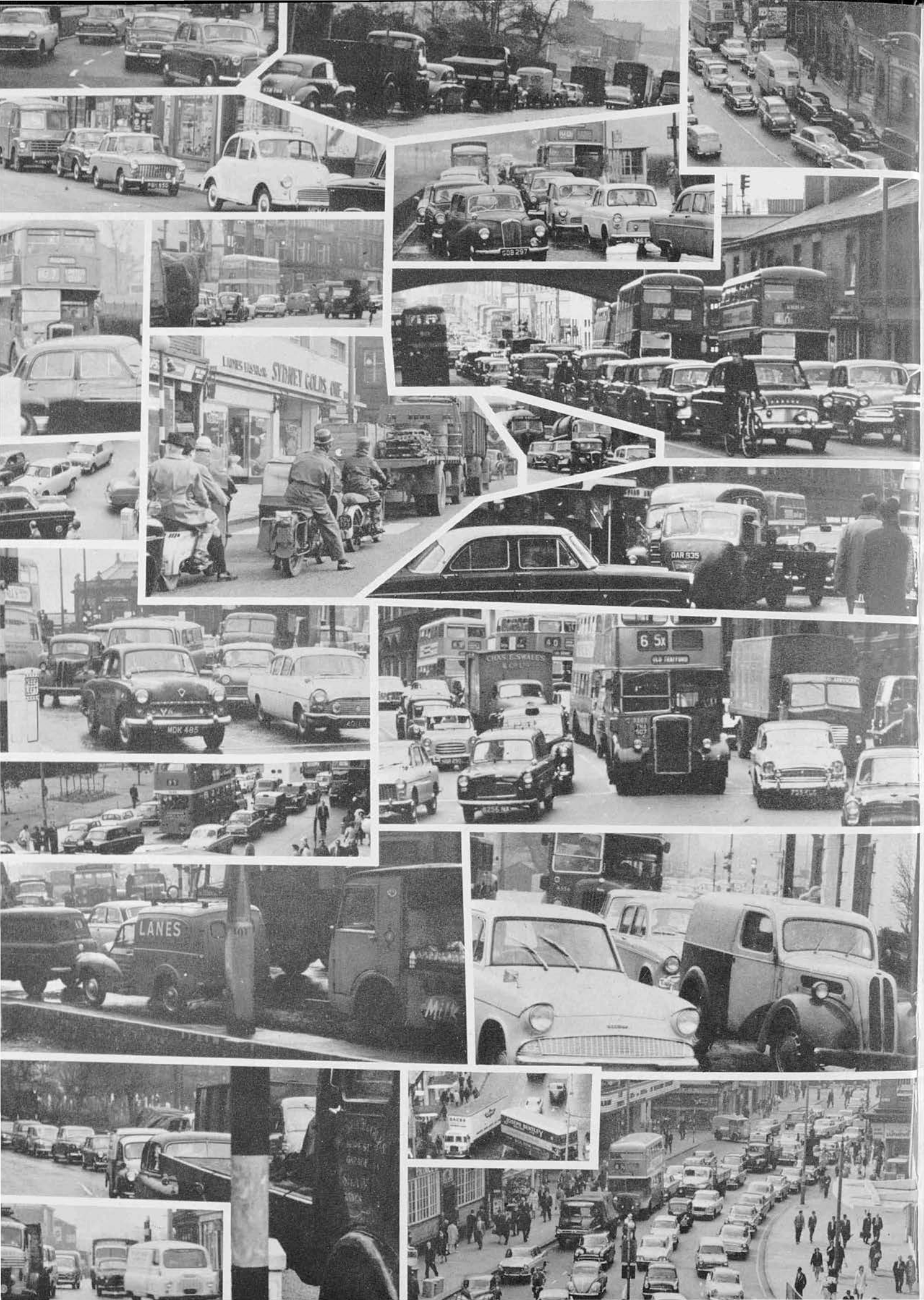
Transport who will therefore have to consider whether they or other alternatives should be accepted as essential parts of the solution. [4]

It will be understood that the proposals contained in the Highway Plan may be subject to modifications, and that adjustments may have to be made when a rate of annual expenditure has been determined. [5]

The members of the Committee have found the task of producing the Plan a thoroughly interesting and fascinating one, and wish to record their thanks to the Technical Sub-Committee who have been responsible for organising the survey and analysing all the information upon which it has been based. The Sub-Committee in turn have been assisted in the main work by those of its members and other persons who have constituted the Working Party and by others associated with them in providing solutions to local problems. To all these thanks are also due for much assiduous work. [6]

It will be seen on page (iii) that Mr. J. L. Paisley, the Divisional Road Engineer, is a member of the Committee. His services have been invaluable, but it must be understood that they have been given without prejudice and imply no official approval of the Highway Plan. [7]

The cost of undertaking the traffic survey, analysing the information therefrom and producing this report has amounted to approximately £12,200, but this figure does not include the salaries paid by the Local Authorities to members of the Working Party. [8]



THE AREA AND GENERAL TRAFFIC PROBLEM

THE AREA COVERED by the survey is illustrated in the Population Map, Diagram 1, page 6, while Table 1 lists the Highway authorities concerned, together with their areas, population and mileage of existing main roads. Those parts of the Counties of Cheshire and Lancashire within the area contain 14 Municipal Boroughs, 21 Urban Districts, and part of one Rural District. [9]

The spread of urban development throughout the Area is illustrated in Diagram 2, page 7. [10]

The northern County Boroughs of Bolton, Bury, Oldham and Rochdale are physically separated by intervening Local Authorities. Each have their own individuality, but they are nevertheless inseparably involved in the pattern of traffic movement throughout the northern part of the Area. [11]

The remainder of the Area includes the regional centre, to and from which a great deal of the traffic flows, but in addition there are traffic movements of various intensities related to each of the town centres, the various industrial areas (in particular Trafford Park—one of the largest industrial estates in the United Kingdom—containing some 200 factories and employing about 55,000 workers), the Manchester Docks, and the various suburban shopping and business centres. [12]

As might be expected in so large an area of urban development, the number of vehicles passing through from one side to the other is relatively small, being about one-tenth of the total traffic; but each through journey is an exhausting experience. For example, a driver on A.58 can enter the built-up area at Ashton-in-Makerfield

in the west and pass through Abram, Hindley, Westhoughton, Bolton, Bury, Heywood, Rochdale and Littleborough, a distance of 28 miles, with hardly one mile not restricted to a 30 miles per hour speed limit. Similar conditions also apply on A.6, A.56 and A.57 which pass through the centre of the Area. [13]

Although the through traffic may be small in volume in relation to the total traffic within the Area, it represents a considerably higher proportion of the vehicle mileage by virtue of the greater distances travelled. Obviously, it is essential that this traffic, and indeed any local traffic which at present journeys without call through the regional centre, should be provided with suitable by-pass routes; primarily to enable the central area roads to accommodate more freely the traffic which has business therein, but also to relieve the tedium of the through journeys. [14]

At present, traffic crossing the Area in an east-west direction has no suitable ring road, while in a north-south direction only a partial ring is formed by the Stretford/Eccles By-pass. Vehicles travelling from Liverpool to Yorkshire pass through or close to the centres of Salford, Manchester, Rochdale and Oldham. [15]

Commuter traffic on the radial roads into the regional centre constitutes a special problem over a period of about four hours each day on five days of each week, and of course this problem will increase in the future. [16]

The problem which faces the commuter and indeed the through traffic driver at morning and

Table 1

AREAS AND POPULATIONS OF S.E.L.N.E.C. AUTHORITIES AND MILEAGE OF MAIN ROADS

S.E.L.N.E.C. Authorities	Area Sq. Miles	1961 Census Population	Mileage of Main Roads	
			Trunk	Classified
Bolton C.B.	23.8	161,000	1.5	50.2
Bury C.B.	11.6	60,000	—	27.0
Cheshire C.C. (Part)	66.8	301,000	20.9	115.9
Lancashire C.C. (Part)	123.3	644,000	21.6	223.4
Manchester C.B.	42.5	661,000	—	147.7
Oldham C.B.	10.0	115,000	—	25.7
Rochdale C.B.	14.9	86,000	—	30.9
Salford C.B.	8.1	155,000	—	34.3
Stockport C.B.	13.2	142,000	—	32.6
Totals	314.2	2,325,000	44.0	687.7

evening peak hours is illustrated by the Speed Contour Maps, Diagrams 3 and 4, pages 8 and 9. As compared with the speed at which traffic is able to enter and leave the regional centre in a westerly direction along the East Lancashire Road, A.580, it will be seen that a slower movement arises in all other directions, with the worst conditions along Hyde Road, A.57, to the east and Chester Road, A.56, to the south-west. The speed up of traffic resulting from the southward extension of Kingsway, A.34, is clearly indicated. [17]

In the regional centre, within five minutes' travel from Manchester Town Hall, the average speed during peak hours along the main radials is approximately seven miles per hour. At other times during the working day speeds on different radial roads may be from five to ten miles per hour faster. [18]

Some of the main roads are relics of the old turnpikes or earlier systems, but the majority were created during the industrial revolution. By motor age standards many of them are narrow and badly aligned, while in the built up areas they are interrupted repeatedly by side streets and cross roads. [19]

They now have to cope with enormous volumes of traffic which are ever-increasing. In 1954, trunk

road A.56 at Crossford Bridge (Sale/Stretford boundary) was carrying 21,200 vehicles per day, whilst by 1961 the figure had increased to 34,370 vehicles per day, an increase of 62 per cent. This growth is not exceptional; indeed, increases of 75 per cent, 88 per cent and 105 per cent occurred during a similar period at Worsley (A.6), Denton (A.57), and Hazel Grove (A.523). The overall average increase of vehicles on trunk roads within the area during this same period was 74 per cent, equivalent to a compound rate of increase of 8.3 per cent per annum. [20]

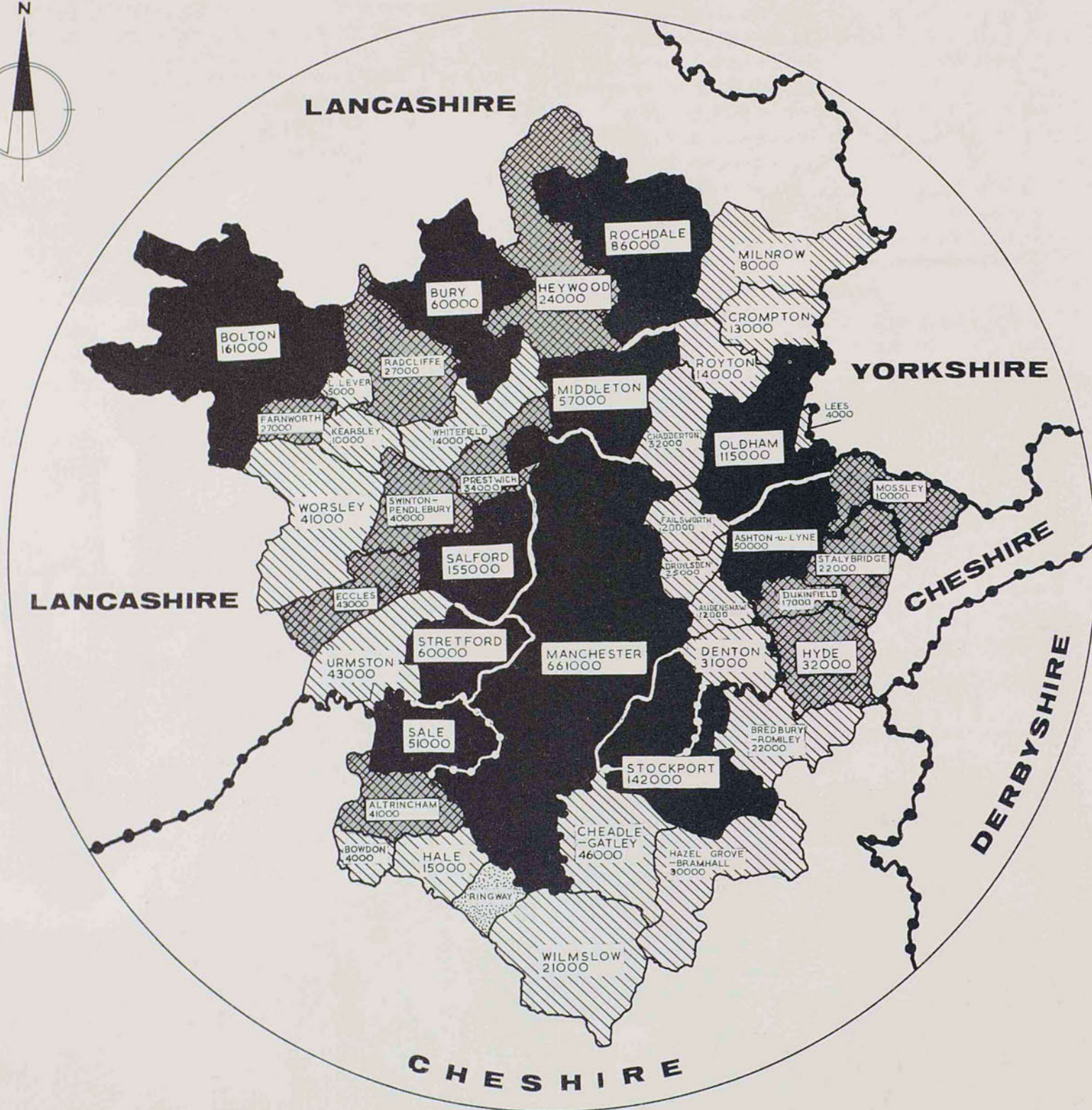
The recently constructed Stretford/Eccles Motorway within the Area, which is already carrying over 27,000 vehicles per 24 hour day with ease and safety, has shown how these and future increases can be accommodated. [21]

The highway proposals in the Development Plans of the respective Authorities were based on an estimate of ultimate traffic which has in fact already been exceeded. Because of the complexity of the traffic problem throughout the Conurbation and the under-estimation of traffic increases, it was clear to the Committee that the first task was to undertake a comprehensive traffic survey. [22]

Junction of Market Street and Cross Street, Manchester, 1962.
This junction as it was in 1913 is shown in the Frontispiece.



POPULATION MAP



REFERENCE

COUNTY BOUNDARIES	
COUNTY BOROUGH AND MUNICIPAL	
BOROUGH OVER 50,000	
MUNICIPAL BOROUGH UNDER 50,000	
URBAN DISTRICTS	
RURAL DISTRICTS	

SCALE IN MILES



TOTAL

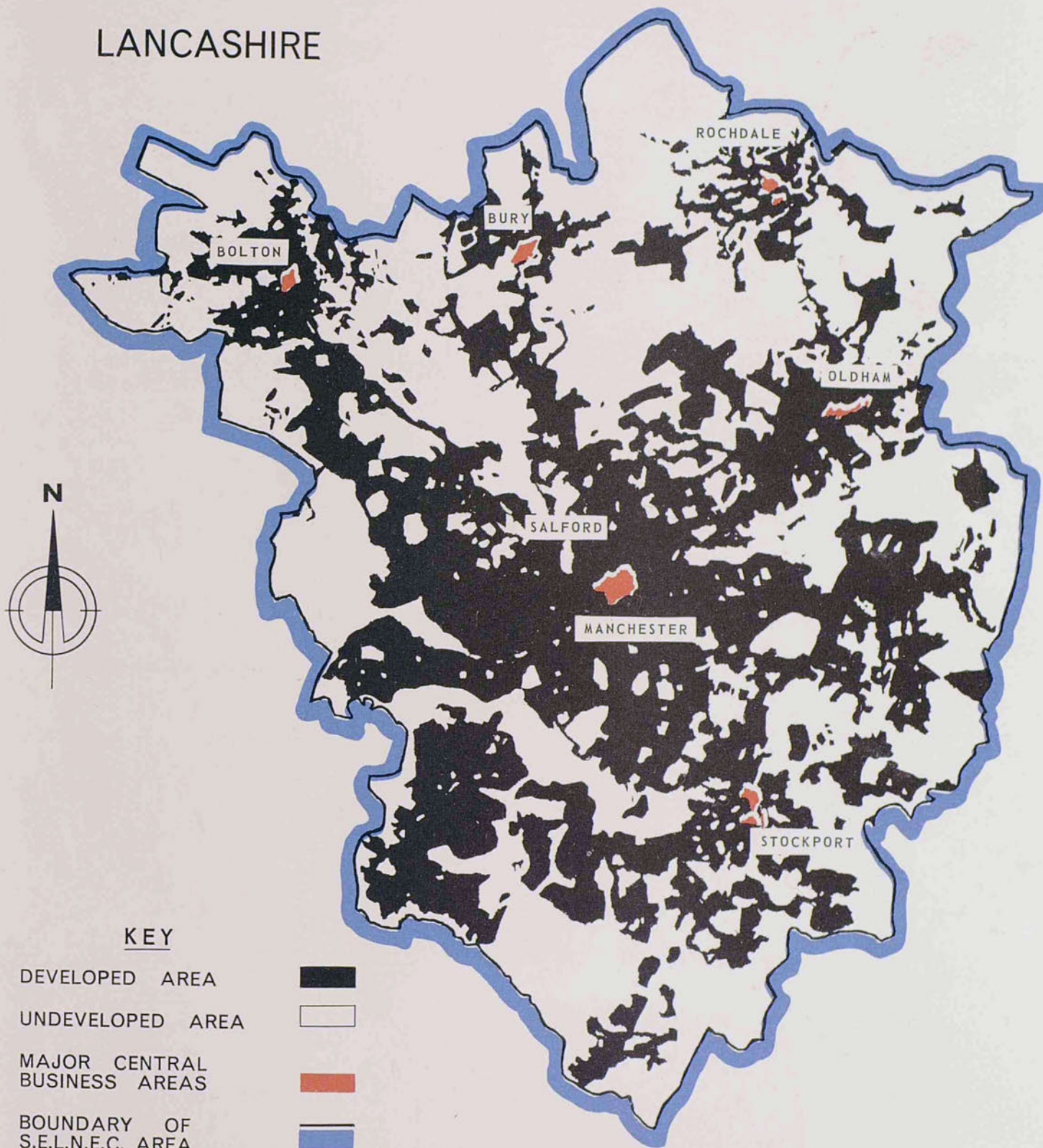
2,325,000

INFORMATION FROM PRELIMINARY
REPORT OF 1962 POPULATION
(DOES NOT INCLUDE RURAL DISTRICTS)

DIAGRAM I

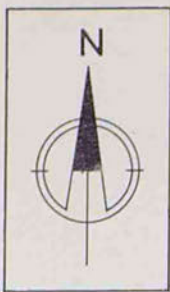
LAND USE MAP

LANCASHIRE



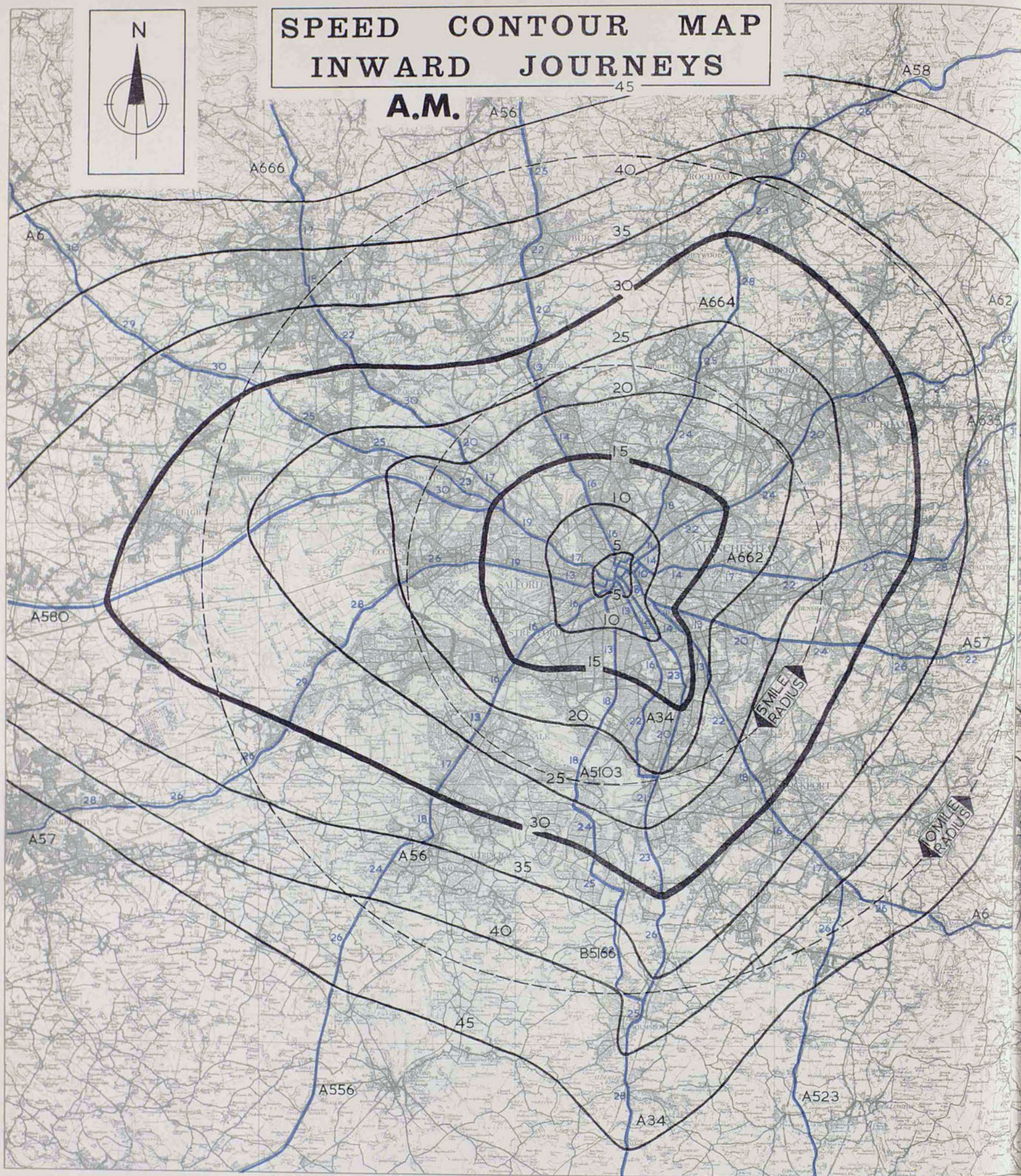
CHESHIRE

DIAGRAM 2



SPEED CONTOUR MAP INWARD JOURNEYS

A.M.



SCALE

0 1 2 3 4 MLS

DIAGRAM 3

CONTOUR INTERVAL 5 MINS.

AVERAGE SPEED (M.P.H.) ON MAIN
RADIAL ROUTES BETWEEN CONTOURS
SHOWN THUS:-

15

SPEED CONTOUR MAP OUTWARD JOURNEYS

P.M.

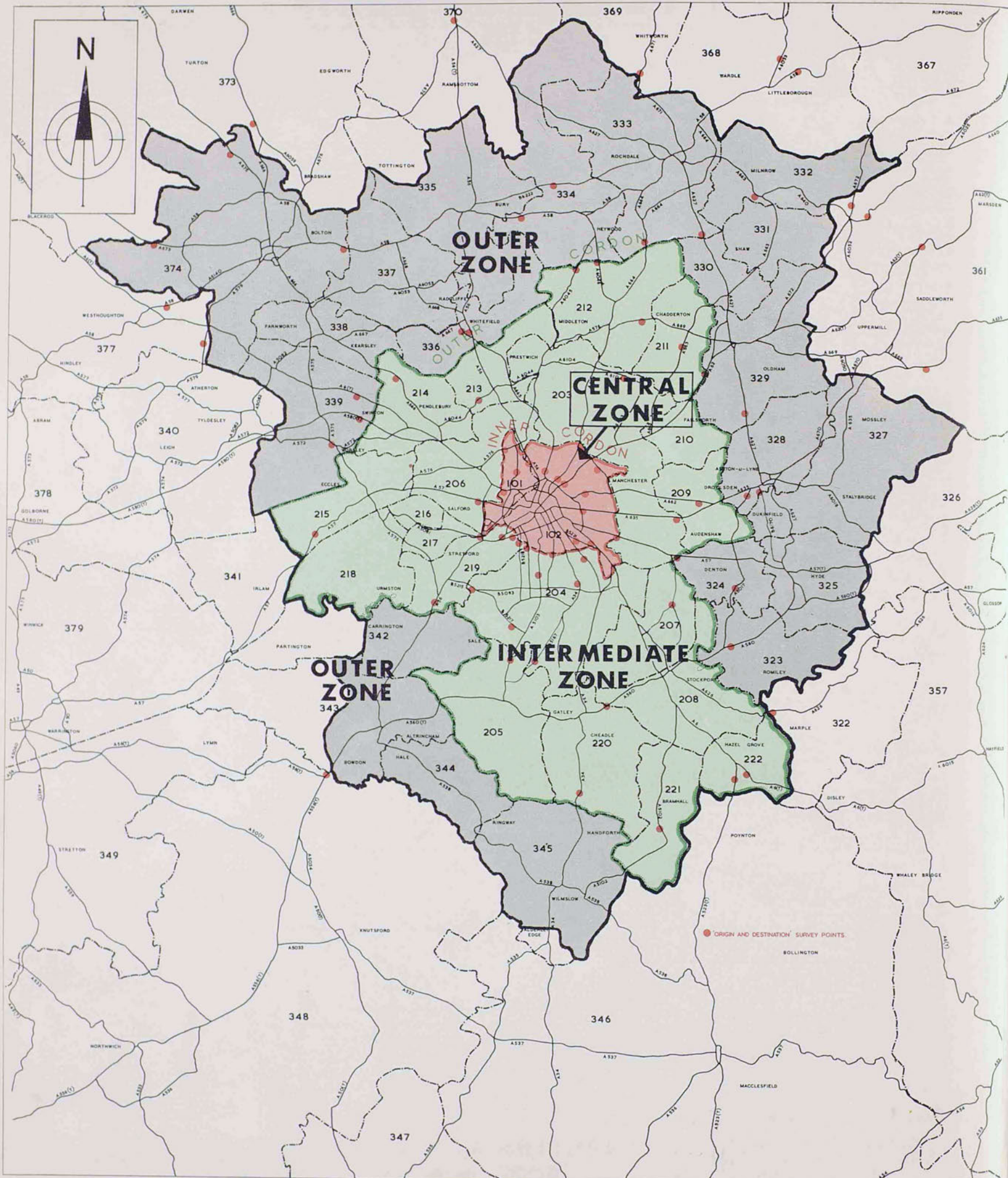


SCALE
0 1 2 3 4 MLS.

DIAGRAM 4

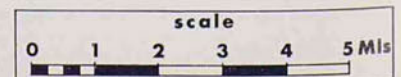
CONTOUR INTERVAL5MINS.
AVERAGE SPEED (C.M.P.H.) ON MAIN
RADIAL ROUTES BETWEEN CONTOURS
SHOWN THUS :-

CENSUS POINTS AND CODING DISTRICTS



10 OUTER ZONE includes the areas coloured grey and the coding districts beyond the boundary of the S.E.L.N.E.C. Area.

DIAGRAM 5



AN ORIGIN AND DESTINATION SURVEY including a volumetric count was undertaken through 75 census points in the positions shown in Diagram 5, page 10, which also shows the zones referred to in paragraphs 24, 25 and 26. [23]

Census points were located along an outer cordon to 'pick up' traffic entering and leaving the intermediate and central zones of the Area. In the northern part of the Area other points were positioned to the north of the four County Boroughs, so completing a circle round each of them. [24]

The outer cordon was formed by census points placed as near as practicable to the proposed line of an Outer Ring Road and varying in distance from four to eleven miles from the centre of the central zone (Manchester Town Hall), while within this an inner cordon enclosing the central zone, i.e., the regional business centre, was provided at a radius of about one to one-and-a-half miles. [25]

In addition, several census points were located on certain circumferential routes in the intermediate zone between the two cordons. [26]

It was later appreciated that the use of a few additional census points in the intermediate zone would have made it possible to assess precisely

the short distance movements of traffic in this zone, but it is considered that the information obtained is sufficient to enable an appropriate design capacity to be adopted for an Intermediate Ring Road proposal. A further survey would be undertaken in any case before the design of any such proposal is finalised. [27]

It was decided to use the 'postcard method' for the origin and destination survey, that is the handing out of reply-paid postcards for completion by vehicle drivers. This method of survey had already been used in Manchester with considerable success in connection with the new major road proposal crossing the south side of the central area of the City, known as 17/7*, but nevertheless its application to the main survey was preceded by a pilot survey in September, 1959. [28]

Particulars of this pilot survey, with the reasons why the 'postcard method' was preferred to the 'direct interview method', are given in Appendix A, page 71. [29]

The bulk of the survey was undertaken on the 20th and 27th May, 1960, at 73 census points, and at two further points on the 17th June, 1960. Altogether 252,825 vehicles were stopped and the drivers asked to fill in reply-paid postcards stating the origin and destination of their present

*So described because it connected two roads, Regent Road, Salford, and Ashton Old Road, Manchester, which were numbered 17 and 7 respectively in the City of Manchester Plan, 1945.

REGIONAL TRAFFIC SURVEY. PLEASE FILL IN AND POST THIS CARD NO POSTAGE STAMP IS REQUIRED				CENSUS POINT. 80	HOUR 8		
VEHICLE (Mark with X)	CAR or TAXI <input checked="" type="checkbox"/>	LIGHT GOODS <input type="checkbox"/> Under 30 cwt.	HEAVY GOODS <input type="checkbox"/>	COACH <input type="checkbox"/>			
PRESENT JOURNEY	TOWN	DISTRICT	STREET				
STARTING POINT	Grockport	South Reddish	Dalkeith Road				
ANY INTERMEDIATE CALLING PLACES (Except for Meals or Fuel)	—	—	—				
FINISHING POINT	Manchester	City	Dantzic Street				
FOR OFFICIAL USE							
1	2	3	4	5	6	7	8

DIAGRAM 6

journey, together with any intermediate calling places. The survey operated between eight a.m. and seven p.m. [30]

Diagram 6, page 11, shows the type of postcard questionnaire which was used for the survey. Each census point was given an identification number which was reproduced on the cards issued at that point. [31]

At ten of the busiest census points, where the number of vehicles exceeded about 600 per traffic lane per hour during peak periods, a 50 per cent distribution of cards was undertaken by issuing them for five minutes and allowing traffic to pass freely through the census points during the following five-minute period. At times other than peak periods, and at all other census points, a 100 per cent distribution was made. [32]

Details of the number of postcards distributed, the number of vehicles counted, and the percentages of cards returned are given in Table 2. It will be seen that 50.7 per cent of the vehicles counted were cars. [33]

Advance warning of the intention to undertake the Survey was given through the local press and by letters to the local trade organisations, the Manchester Branch of the Transport and General Workers Union, British Road Services and other commercial and public transport undertakings operating in the Area. [34]

It is of interest to note that of the 110,480 cards returned only 50 were obviously not intended to be helpful; otherwise, bearing in mind the point of distribution, it was evident that the drivers who had taken the trouble to return the postcards had filled them in conscientiously. [35]

Here it is appropriate to record thanks to all those drivers who assisted in this way. Without their help the survey would have been ineffective. [36]

The findings obtained from the main survey were supplemented by certain information from local surveys and recent traffic counts which had been undertaken for various purposes by Highway Authorities in the Area. [37]

Table 2
ORIGIN AND DESTINATION TRAFFIC SURVEY

Vehicle Type	No. of Cards Distributed	Cards Returned		Vehicles counted in one direction, i.e., direction of survey, during an 11-hour period	
		Number	Per Cent	Number	Per cent
Cars	143,910	72,936	50.7	151,640	50.7
Light Goods (under 30 cwts)	42,110	17,635	41.9	44,471	14.9
Heavy Goods	65,750	19,560	29.8	69,364	23.2
Coaches (public service vehicles not included)	1,055	349	33.1	1,113	0.4
Sub-Total	252,825	110,480	43.7	266,588	—
Buses (public service vehicles)	—	—	—	15,387	5.1
Motor Cycles	—	—	—	17,009	5.7
		Totals		298,984	100.0

IN ORDER TO ASSESS the amount of traffic movement, the Area was divided into 42 coding districts (see Diagram 5, page 10) and beyond these were 39 ever-enlarging coding districts ultimately covering the whole of England, Scotland and Wales. [38]

It was thus possible to trace all traffic movements which would be transferred to the national motorway system, when constructed, and the new movements to and from these motorways which would then arise within the Area. [39]

The coding districts were also sufficient to enable desire lines* to be produced indicating the broad trend of traffic movements throughout the Area and also the relationship of movements between the outer, intermediate and central zones (shown on Diagram 5, page 10). However, they were not sufficient to ascertain more precisely the extent to which individual roads were being used by traffic in those parts of the Area where alternative routes are available, or to assign the estimated volumes of future traffic where existing routes to be retained and new routes to be provided would make alternatives available. Therefore, in these parts the coding districts were further divided into sub-districts so that the Area itself was divided in all into 84 effective districts for the purpose of this closer computation. [40]

The movements of traffic between the districts were translated from the traffic survey postcards (see Diagram 6, page 11) to 'punched' cards, and then tabulated by machine. They were then summarised on a separate chart for each census point. Diagram 7, between pages 14 and 15, shows a typical chart. [41]

In the northern part of the Area the four County Boroughs each formed a coding district. These were not sub-divided, but the survey information can be broken down whenever required to supplement any inner area traffic surveys undertaken to corroborate inner road proposals. [42]

The desire lines indicating the daily flow of traffic in this part of the Area are shown on Diagrams 8 and 9, pages 16 and 17. [43]

Diagram 8 illustrates to scale in yellow colour the amount of traffic passing right through the northern part, that is traffic which could travel on by-pass routes if and when these are provided. [44]

It shows that there are large movements of traffic between the remainder of the Area and the north-west, mainly via the Chorley/Preston A.6. route or the Bolton/Belmont A675 route, to the north (Accrington, Burnley, Colne) through Bury, in a north-easterly direction to Bacup and Yorkshire through Rochdale, and greatest of all to Yorkshire through Oldham. [45]

The movement of traffic to the north-west would be largely accommodated on any new road to Preston, while the traffic to the north through Bury would use a by-pass of this town if this were provided. The north-easterly movement through Rochdale and the more easterly movement through Oldham give some indication of the extent to which the construction of a new road to Yorkshire would relieve traffic conditions in these two towns. [46]

Diagram 9, page 17, shows to scale in blue colour the amount of daily traffic originating outside the northern part of the Area and terminating within it, and in red colour the amount between the County Boroughs, other than that between Oldham and Bolton/Bury respectively. [47]

The Diagram clearly indicates the considerable volume of traffic to and from Bolton and West Lancashire, of Bury traffic to the north and south, of traffic between Rochdale, Bolton and Oldham respectively and the remainder of the Area, and also the large proportion of traffic from the latter town in a southerly direction (Ashton-under-Lyne/Hyde). It can be seen that the movements between the County Boroughs (shown in red) are by comparison very much smaller. [48]

It will be noted that the amount of traffic having business in the County Boroughs (Diagram 9) is substantially greater than the through traffic (Diagram 8) which can be by-passed. Thus the removal of through traffic from the northern County Boroughs would still leave a large local traffic problem which can only be solved by a significant provision of new roads and road widenings. [49]

The desire lines in the remainder of the Area are related to the sub-division into the outer, intermediate and inner zones, shown on Diagram 5, page 10. The reason for the positioning of the outer cordon has already been mentioned in Chapter 3 (paragraph 23, page 11). It will be seen that this cordon coincides with the boundary of

*A desire line can be defined as the straight line between origin and destination that traffic would follow if it was available as a route. The thickness of the line is a measure of the traffic volume to an indicated scale.

the Area in two places, but of course the outer zone spreads far beyond the boundary of the Area, and indeed, as previously mentioned, covers the whole of England, Scotland and Wales. [50]

These desire lines are illustrated on Diagrams 10 to 14, pages 18 to 22. [51]

Diagram 10 indicates in maroon colour the daily traffic which passes right through without calling anywhere. By comparison with Diagrams 13 and 14, showing the movement of traffic into the central zone, it will be seen that in general these movements are relatively insignificant. [52]

However, there are three movements which might particularly be noted, being the east-west movement across the upper part of the diagram (much of which would no doubt be transferred to any new east-west road provided in this part of the Area), the north-south movement on the right-hand side of the diagram (which is also indicated in Diagrams 8 and 9), and the movement of still larger intensity in the same general direction, shown in the bottom right-hand corner. These last mentioned movements are of interest because they would be accommodated on the eastern section of an Outer Ring Road. [53]

In 1945, when this section of an Outer Ring Road was included in the Manchester and District Regional Plan, the extent to which it would prove to be useful was in doubt. [54]

Diagram 11 shows in black colour the movement of traffic between points in the outer zone and points in the intermediate zone. The extent of the traffic movement between Sale/Altrincham and the Trafford Park Industrial Estate can be clearly seen. The movements into the northern part of the Area are of course complementary to those shown on the desire line diagrams for that part. Perhaps the only other point of special interest in these diagrams is the extent of the movement of traffic eastwards of the northern part of Stockport, and into and out of the centre of Stockport from the east and south-east. [55]

Diagram 12, page 20, indicates in green colour the amount of traffic moving between points within the intermediate zone and not calling in the central zone. A substantial movement can be seen across the centre of the diagram between Stockport in the south-east and the west and north-west, including the Trafford Park Industrial Estate. As will be seen later (paragraph 152, page 35) a new road is proposed from Stockport across south Manchester towards the Trafford Park area which would accommodate this movement. There are also considerable movements between Cheadle and Stockport in the south, from south Manchester to north-east Manchester,

and between north-east Manchester and Stockport. [56]

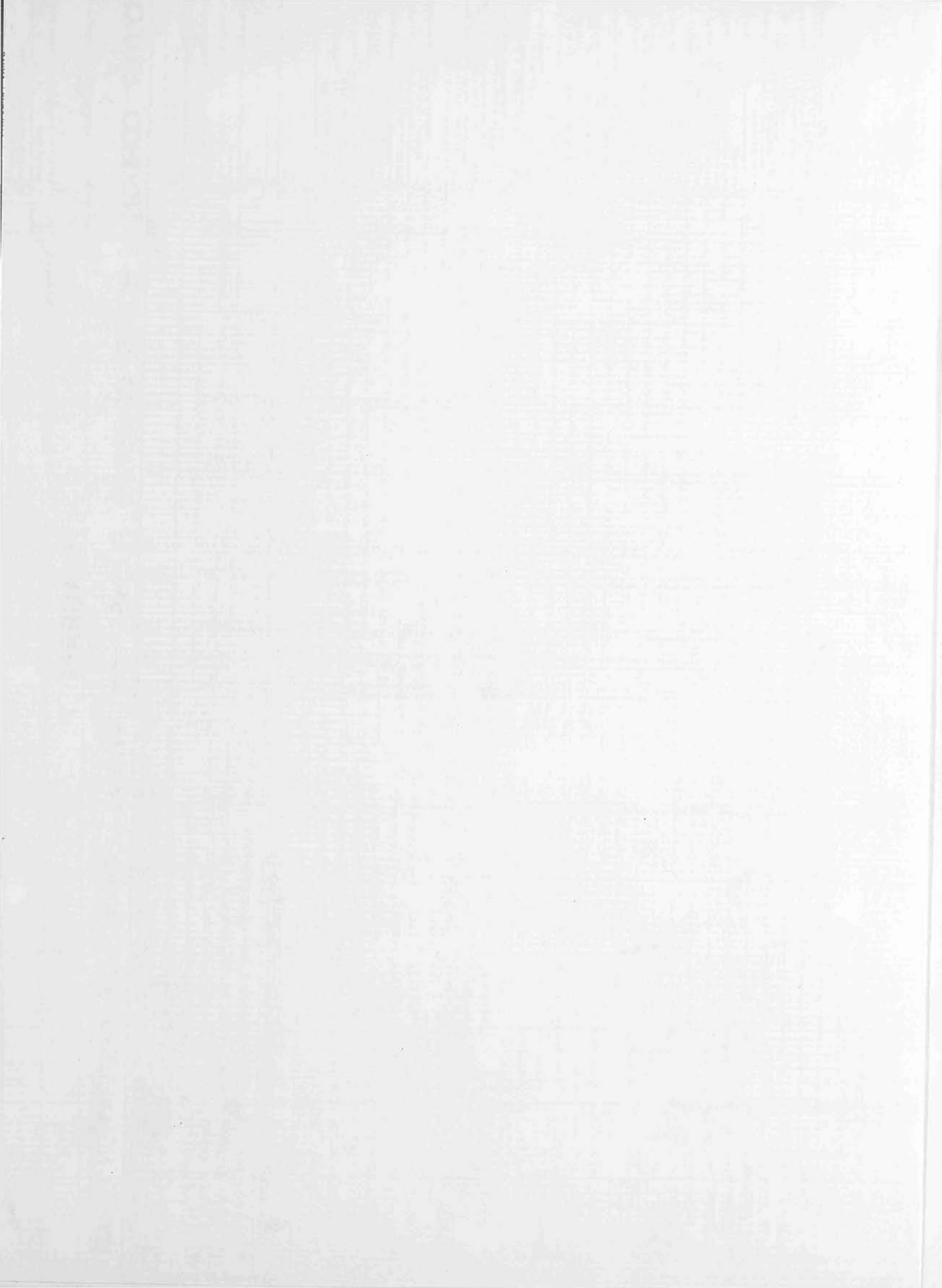
Diagram 13 illustrates in red colour the traffic between points in the outer zone and points within the central zone. The substantial south-west traffic (Sale, Altrincham, Knutsford, Chester, The Wirral, North Wales) would be expected by all people having a knowledge of the area, but it is perhaps surprising to note the almost equal amount of north-west traffic (Bury, Radcliffe, Whitefield). Indeed, from the north-west as a whole (including Bolton, Preston, Wigan and Liverpool) it will be seen that there is a considerable overlapping of the desire lines which tends to disguise the fact that in total the north-west traffic from the outer zone is very much larger than that from any other direction. To the east of the central zone there is an overlapping of the desire lines for the Ashton and Hyde traffic, which again tends to disguise the build-up of this traffic as the central zone is approached. [57]

Other substantial movements should be noted, particularly in the north-easterly (Oldham and Yorkshire) and southerly (Wilmslow and the Potteries) directions, and also to the south-east (Macclesfield and Buxton). [58]

Diagram 14 shows in blue the extent of traffic movements between points in the intermediate zone and points in the central zone. It will be seen that the biggest movements from the outer parts of the intermediate zone are from the south (Cheadle) and from the north (Prestwich). As the central zone is approached there is a considerable overlapping of desire lines, particularly to the south—south-east, provided here by the additional build-up of traffic from the nearer parts of the intermediate zone (Didsbury, Parris Wood and North West Stockport). [59]

Diagrams 13 and 14 must of course be taken together to give the full picture of the intensity of traffic on the approaches into the central zone. They clearly show the extent to which radial traffic predominates and hence the great importance of the radial routes, while the other diagrams indicate that the amount of by-passable traffic passing through the central zone is relatively small. [60]

The analysis of the central zone traffic movements is further illustrated in Diagrams 15A and 15B, page 23, which show in the upper figures the present daily traffic (total of both directions) and the peak hour traffic (in one direction only) into and across the zone. It will be noted that there is a close relationship between the percentages of daily and peak hour movements; those between the intermediate and central zones being 50 per cent and 48 per cent respectively, between the



outer and central zones 30 per cent and 27 per cent respectively and those across the latter zone 20 per cent and 25 per cent respectively. [61]

The relationship between peak hour flow in one direction and daily flow (16 hours) in two directions varies to some extent in different circumstances, but it is normally of the order of 1 to 16.5 in urban areas. It is interesting to note that the ratio in respect of movements from the intermediate zone into the central zone is of the order of 1 to 13.3 and from the outer zone into the central zone 1 to 14.8. [62]

Of the traffic at present passing through the central zone, 20 per cent of the daily and 25 per cent of the peak hour traffic make no calls therein. [63]

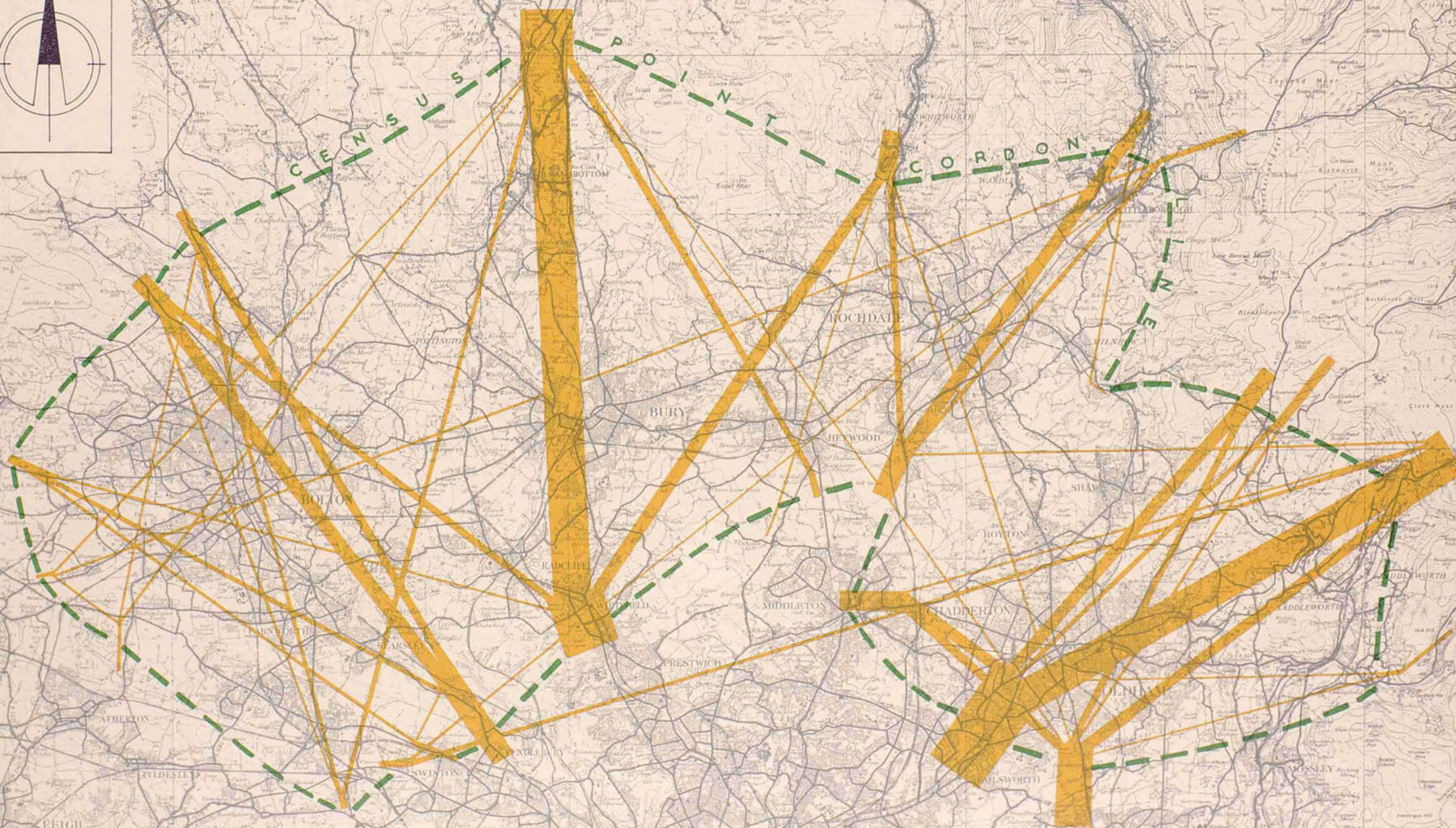
For a more detailed analysis of traffic movements and traffic requirements, the central zone was divided into three parts, i.e., an inner core within the City Centre Road, an intermediate area between the City Centre Road and the boundary formed by the northern arc of an Inner Ring Road and Link Road 17/7, and an outer area beyond this. These are indicated

diagrammatically on the lower figures of Diagrams 15A and 15B, and are coloured red, yellow and blue respectively. [64]

The percentages of daily and peak hour traffic are not outstandingly different. It will be seen that less than one-quarter of the traffic which passes the inner cordon requires to go into the inner core, and that probably little more than one-third would need to go beyond the boundary formed by the northern arc of an Inner Ring Road and Link Road 17/7, when these are fully available. Thus, if these roads could be designed so that they form a more attractive route for traffic which does not have to go into the inner core, a great deal of traffic which would otherwise use the City Centre Road would not then do so. [65]

There are of course movements between points within the inner cordon which the survey does not take into account. These could only be disclosed by establishing one or more cordons of census points inside the inner cordon itself, and this would no doubt need to be done before the precise designs of any Inner Ring or City Centre Road systems are undertaken. [66]

THE NORTHERN PART



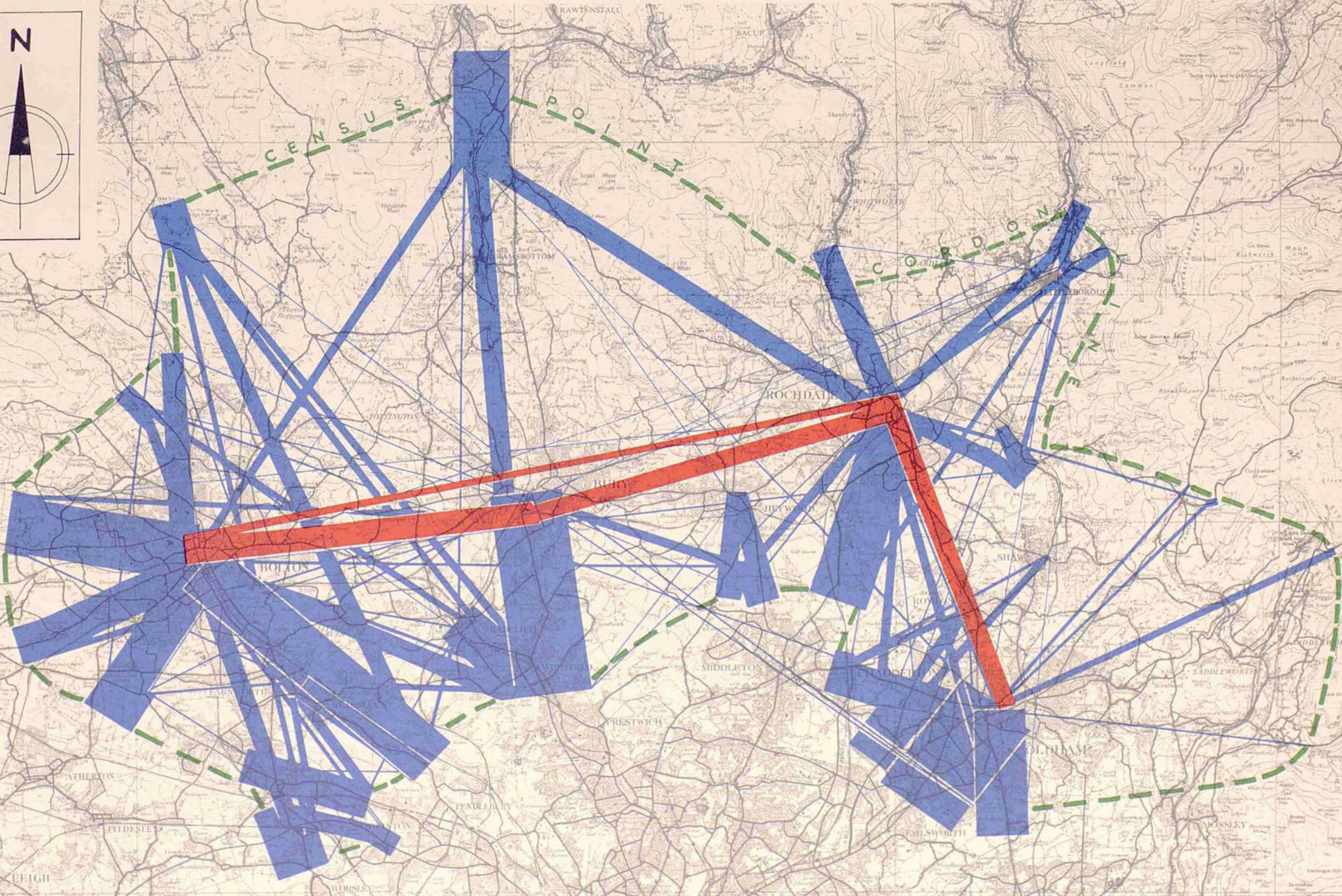
TRAFFIC SCALE 1"=10,000 vehs.

TWO-WAY TRAFFIC CROSSING THE CORDON LINE WITH ORIGINS AND DESTINATIONS OUTSIDE THE AREA SHOWN IN YELLOW

TOTAL 20,933 vehs/day

DIAGRAM 8

THE NORTHERN PART



TRAFFIC SCALE 1"=10,000 vehs.

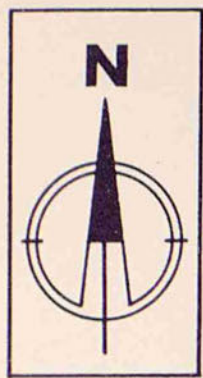
TWO-WAY TRAFFIC CROSSING THE CORDON LINE WITH ORIGINS OR DESTINATION WITHIN THE AREA SHOWN IN BLUE

TWO-WAY TRAFFIC BETWEEN URBAN TOWN CENTRES WITHIN THE AREA SHOWN IN RED.

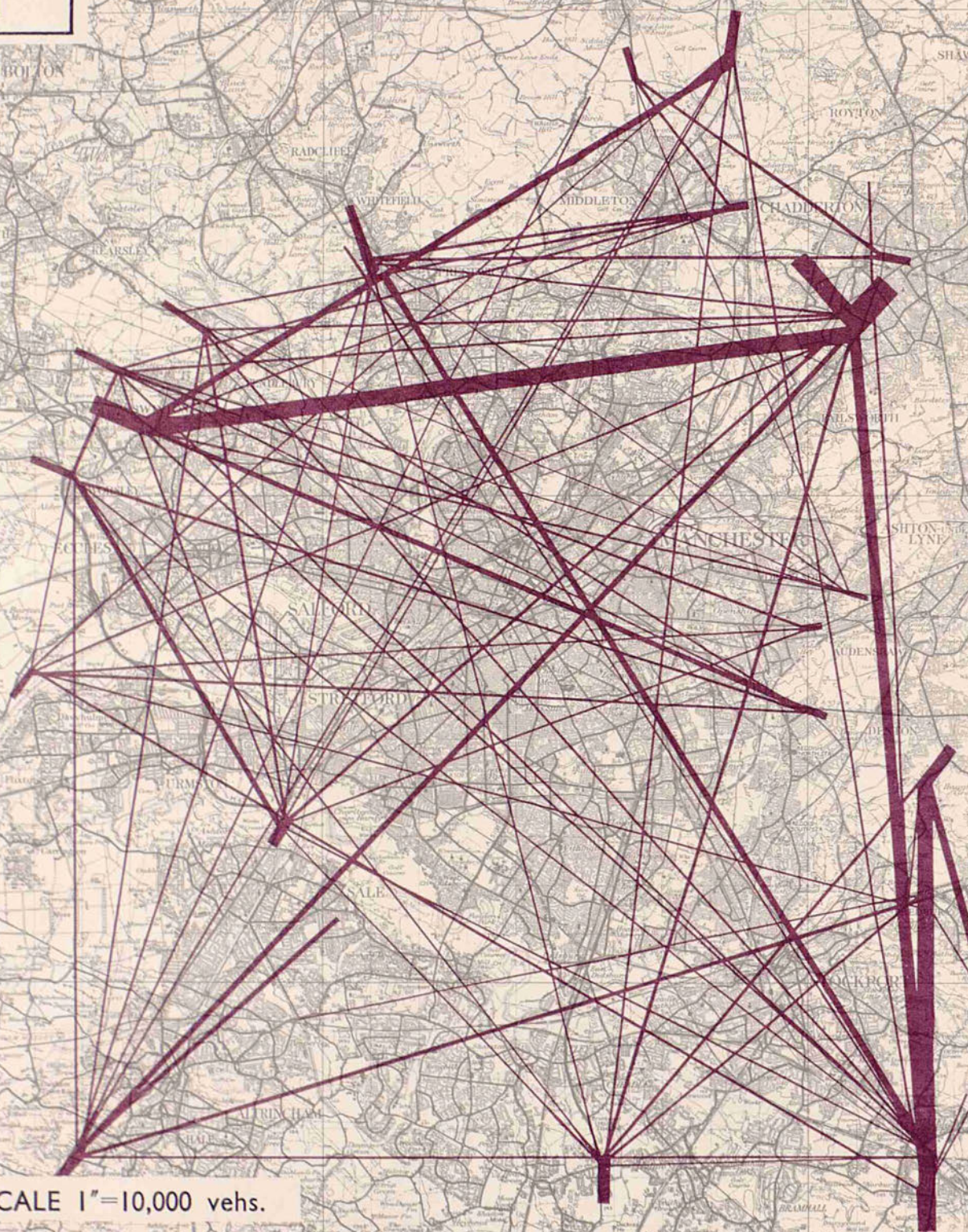
TOTAL 104,174 vehs/day

TOTAL 5,336 vehs/day

DIAGRAM 9



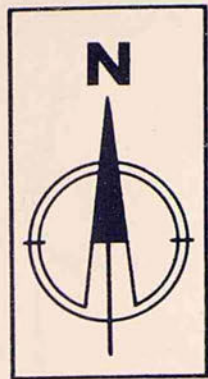
OUTER ZONE TO OUTER ZONE



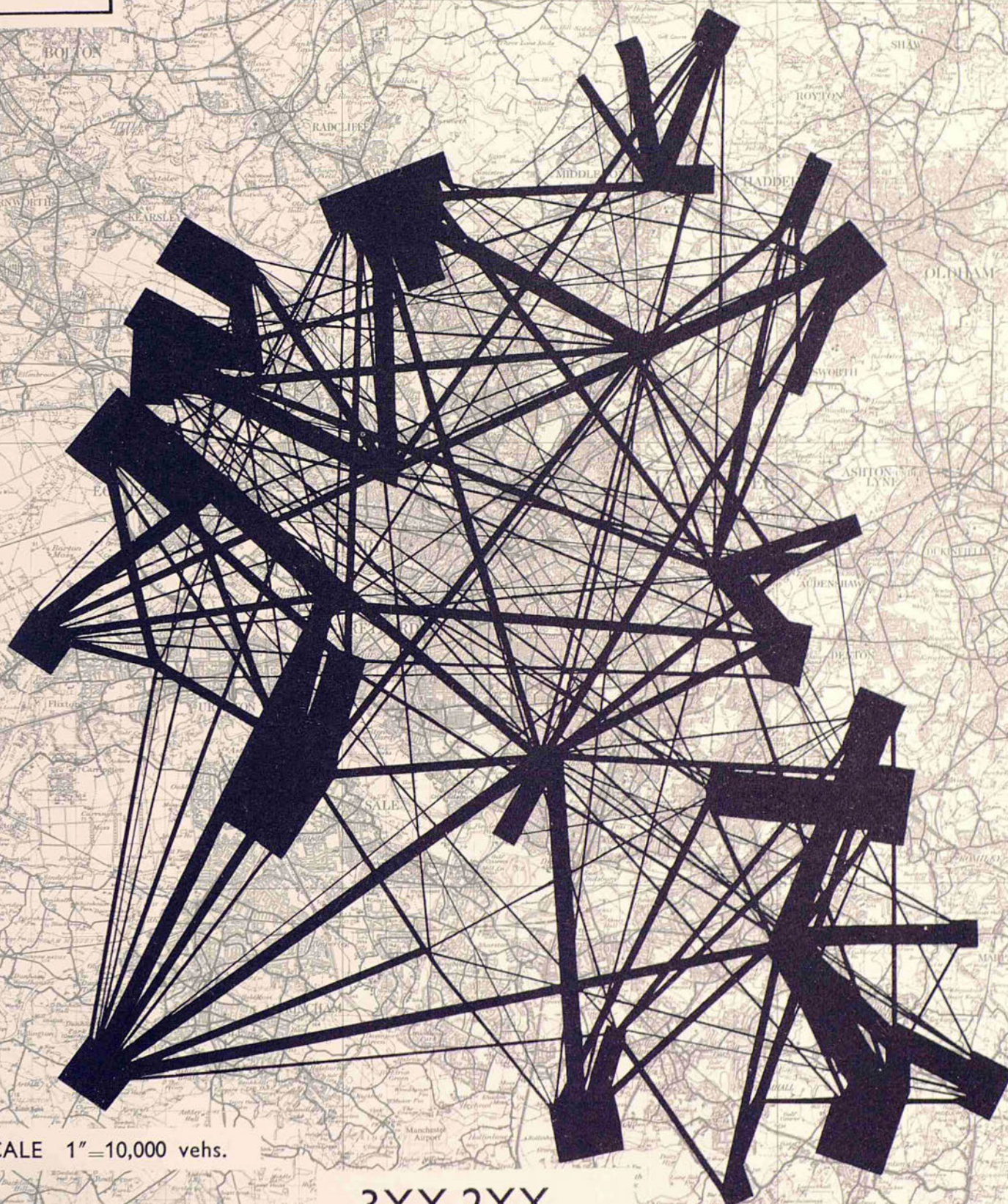
TRAFFIC SCALE 1"=10,000 vehs.

3XX-3XX

31,000 veh/day



OUTER ZONE TO INTERMEDIATE ZONE



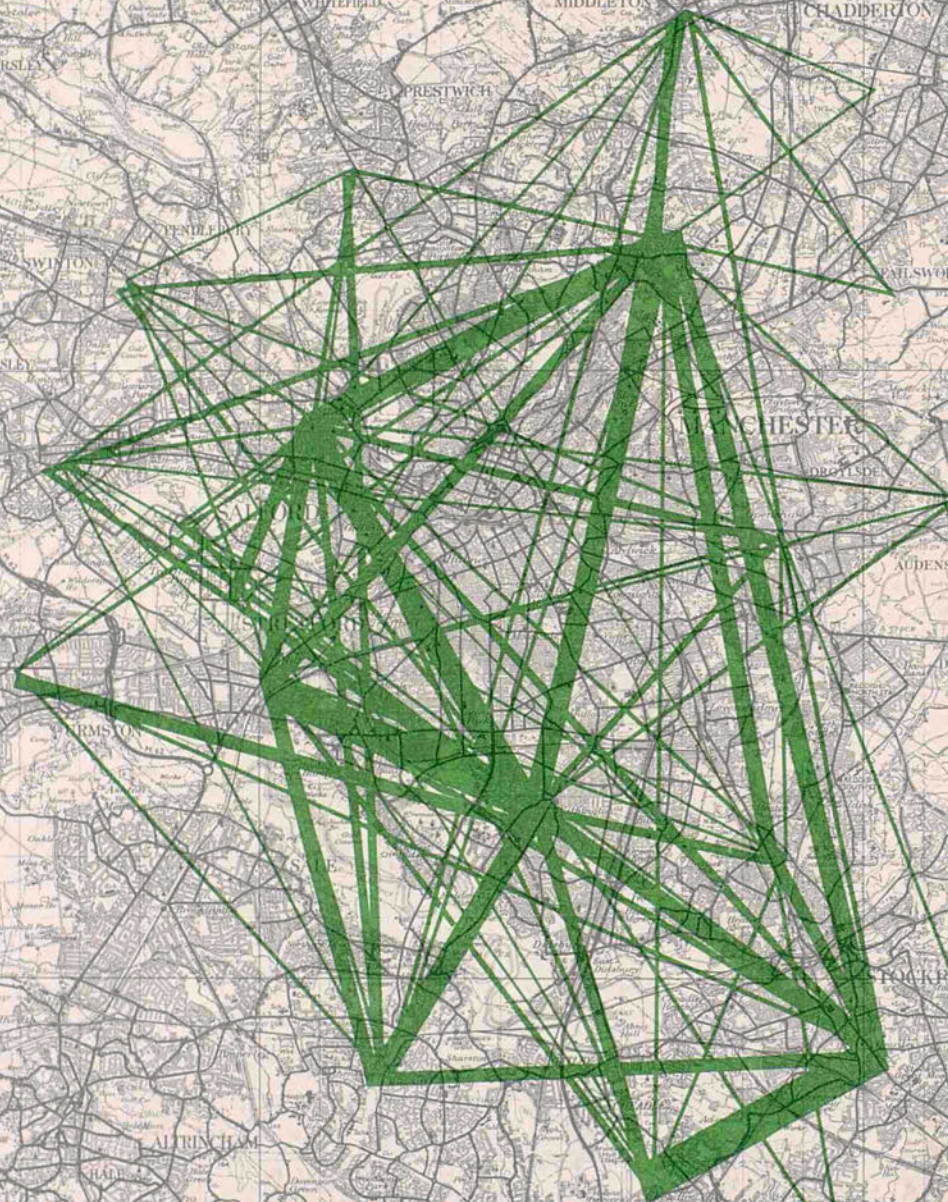
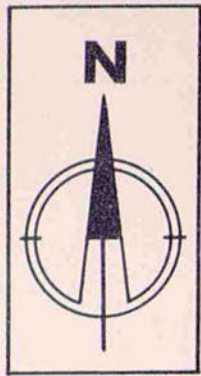
TRAFFIC SCALE 1"=10,000 vehs.

3XX-2XX

107,316 veh/day

DIAGRAM II

INTERMEDIATE ZONE TO INTERMEDIATE ZONE



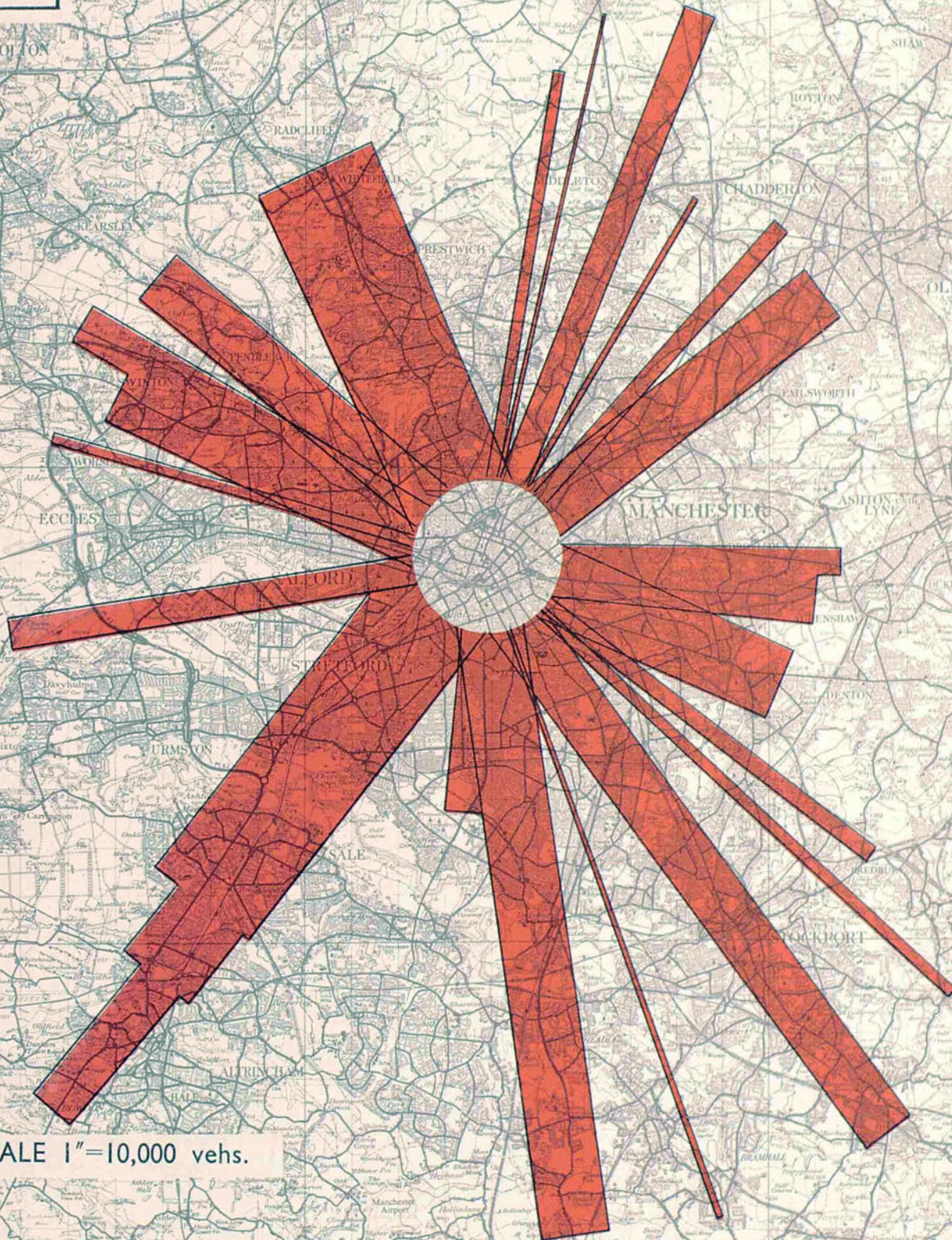
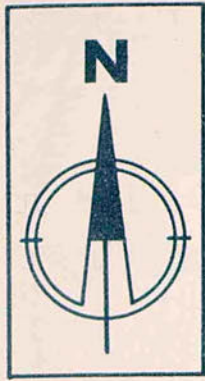
TRAFFIC SCALE 1"=10,000 vehs.

2XX-2XX

39,909 veh/day

DIAGRAM 12

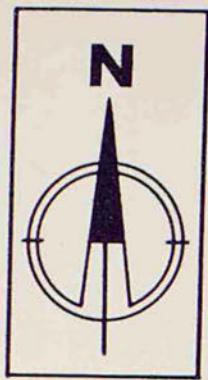
OUTER ZONE TO CENTRAL ZONE



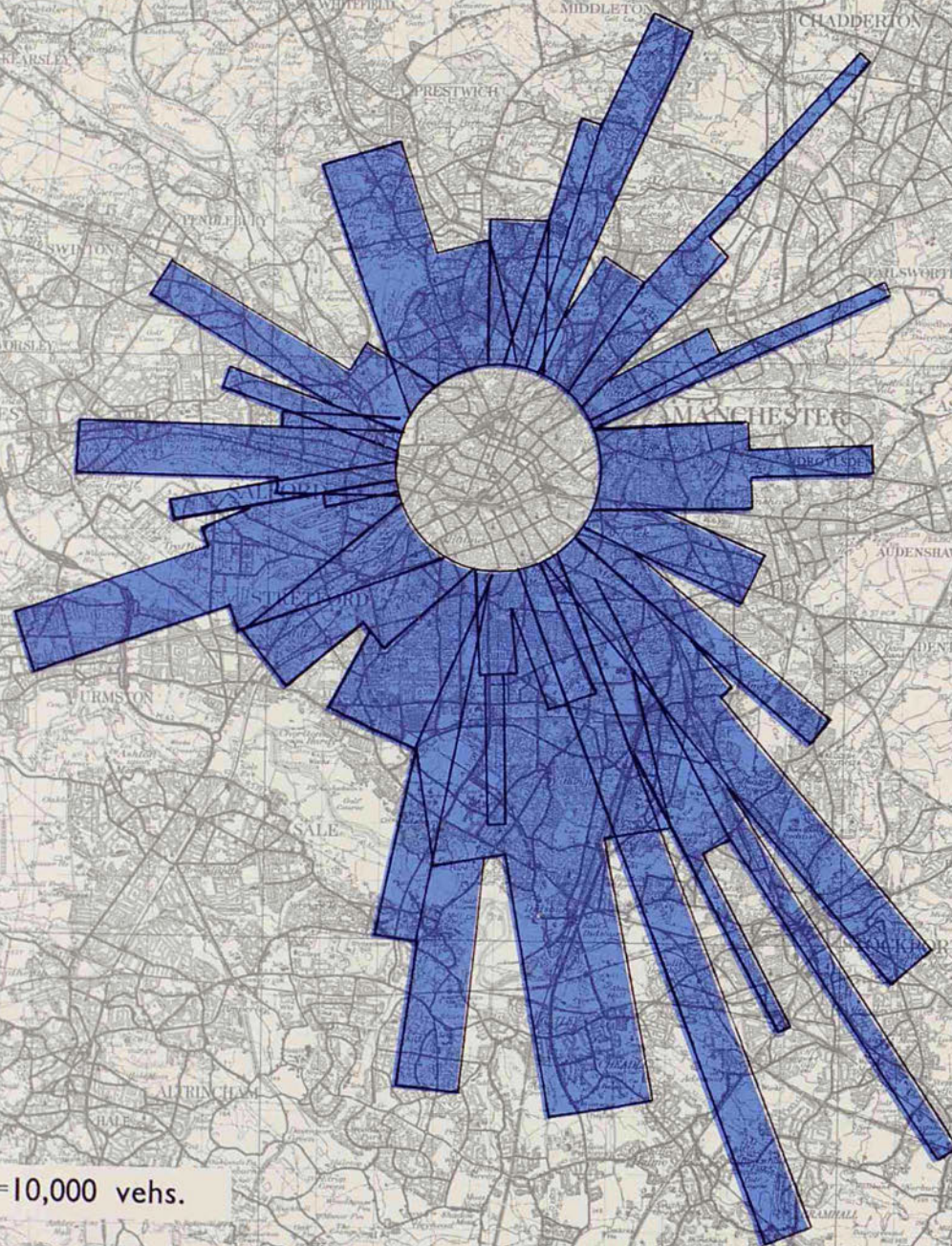
TRAFFIC SCALE 1"=10,000 vehs.

3XX-1XX
61,000 veh/day

DIAGRAM 13



INTERMEDIATE ZONE TO CENTRAL ZONE



TRAFFIC SCALE 1"=10,000 vehs.

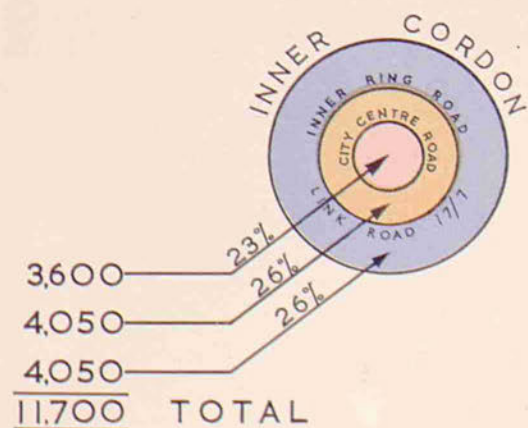
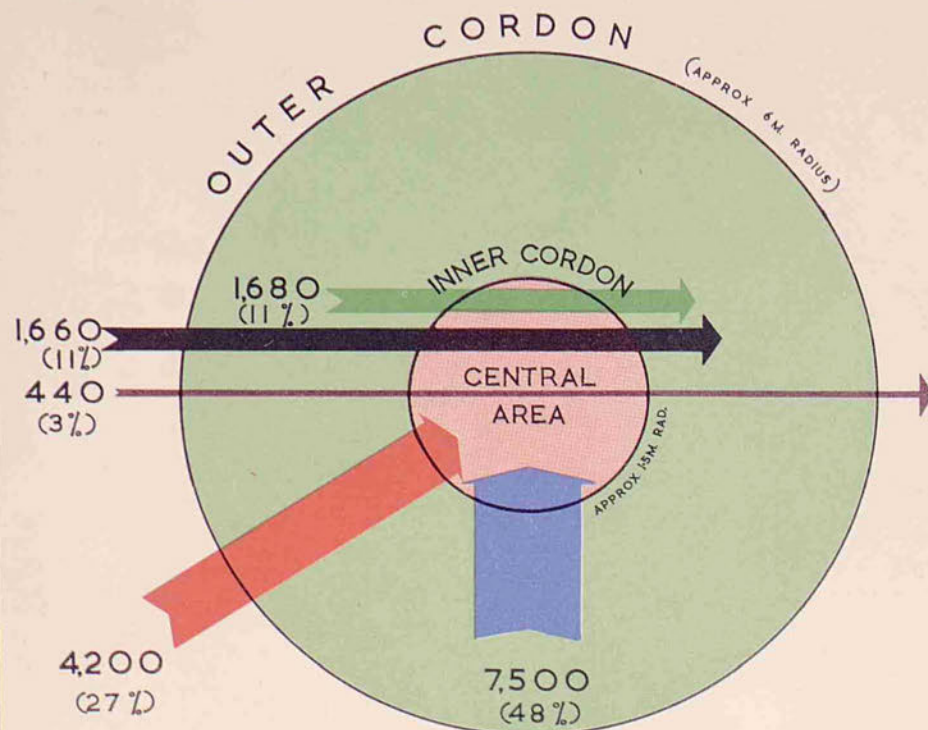
2XX-1XX

102,600 veh/day

DIAGRAM 14

TRAFFIC AT INNER CORDON

PEAK

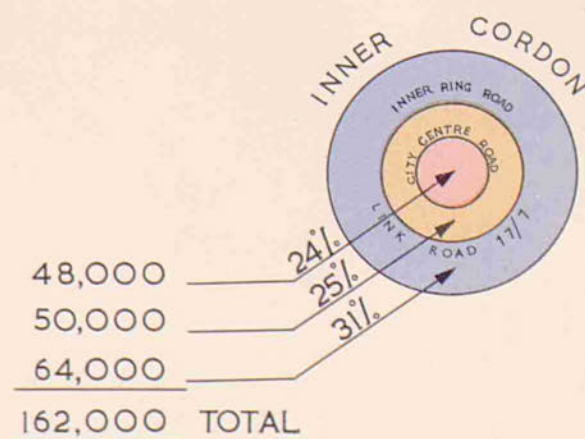
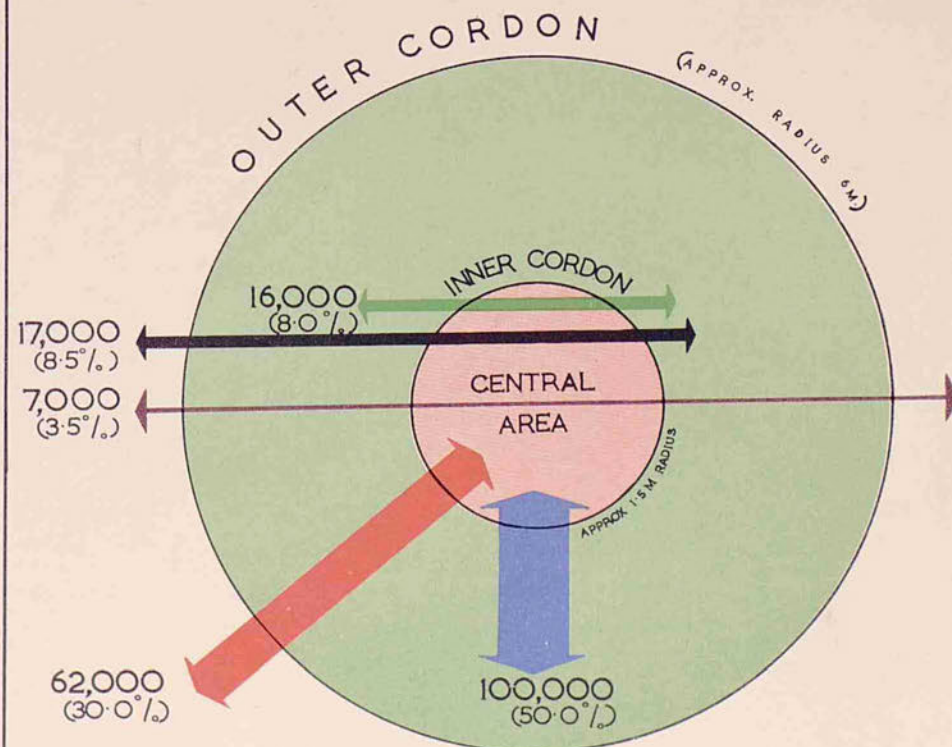


N.B. May 1960 traffic volumes shown
[Excluding R.S.V.'s & Motor Cycles]

DIAGRAM 15A

TRAFFIC AT INNER CORDON

DAY

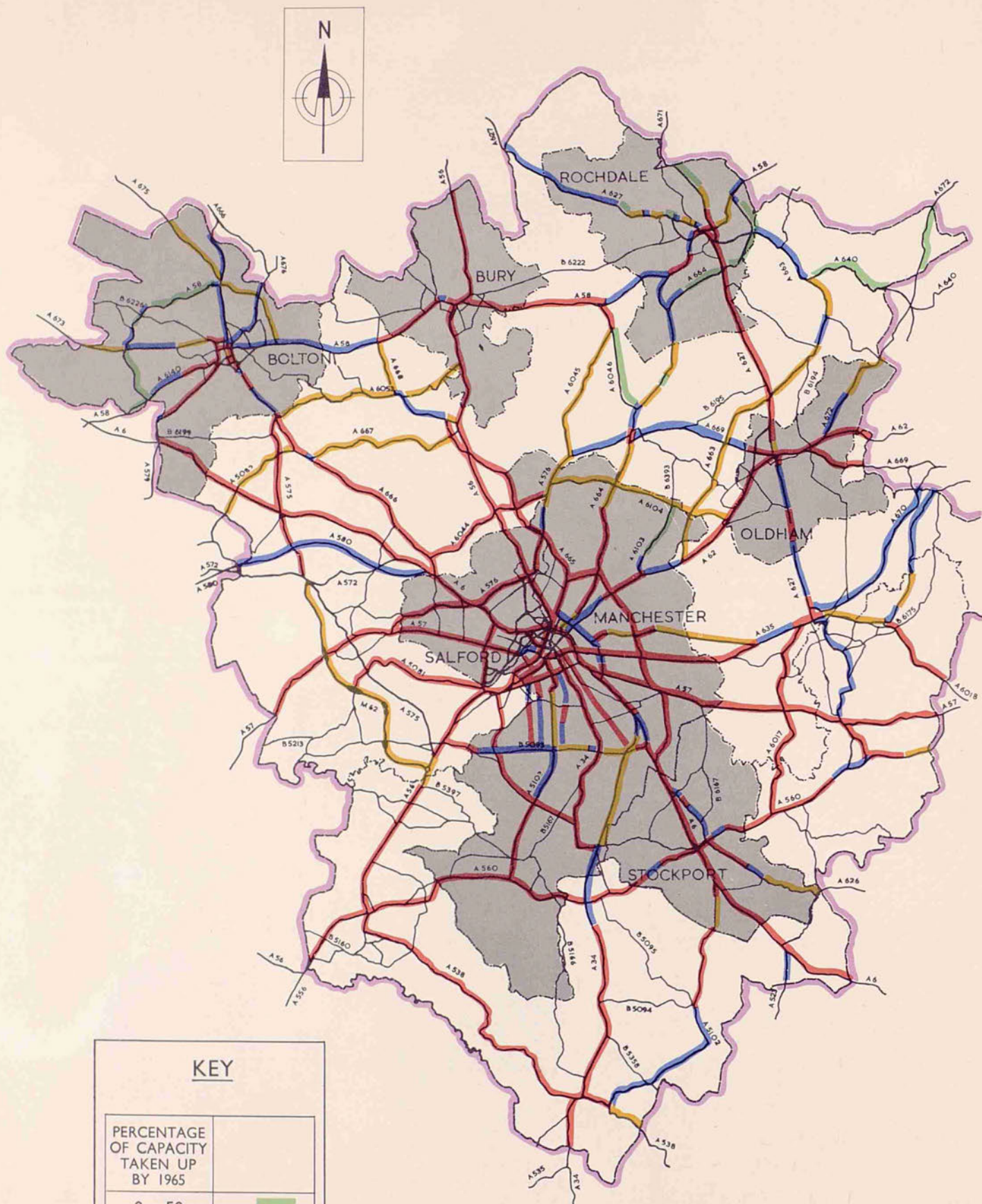


N.B. May 1960 traffic volumes shown
[Excluding R.S.V.'s & Motor Cycles]

DIAGRAM 15B

OVERLOADING DIAGRAM

EXISTING ROAD SYSTEM



KEY

PERCENTAGE
OF CAPACITY
TAKEN UP
BY 1965

0 — 50



50 — 100



100 — 150



OVER 150



CAPACITY STANDARDS

2 LANE	5000 VEHS./DAY
3 LANE	9000 VEHS./DAY
4 LANE	15000 VEHS./DAY
DUAL 2 LANE	18000 VEHS./DAY

CAPACITY OF THE EXISTING ROAD SYSTEM

THE MEMORANDUM on the Design of Roads in Rural Areas (No. 780) produced by the Ministry of Transport in 1961, recognised that the design of such roads should provide for a possible continuation of a five per cent growth rate of traffic for a minimum period of about 20 years, or in other words for two and a half times the 1959 traffic volumes. [67]

An assessment was made of the traffic which would be using the existing highway system of the Area in 1965 on the basis of such a growth per annum. The date was chosen because no sufficiently substantial improvement of the highway system to affect the position could be made by that time. [68]

The capacity of the existing highways is limited by the delays caused by cross-traffic at main road junctions, interferences in flow which arise from the use of numerous side junctions, variations in carriageway widths and all the losses of movement which arise in a built-up area where pedestrians and vehicles share the same highway. After taking these matters into due consideration, the standards of capacity under average conditions, shown in Table 3, were applied. [69]

On this basis, Diagram 16, page 24, illustrates the extent to which the existing road system would be overloaded in 1965. [70]

The roads coloured green and yellow are those which would not be overloaded. In length these total only 23 per cent of the main road system. The roads coloured blue, amounting to 21 per cent of the total road system, would be overloaded to an extent not exceeding 50 per cent of their capacity, while the roads coloured red, amounting to 56 per cent of the road system, would be overloaded by more than 50 per cent. [71]

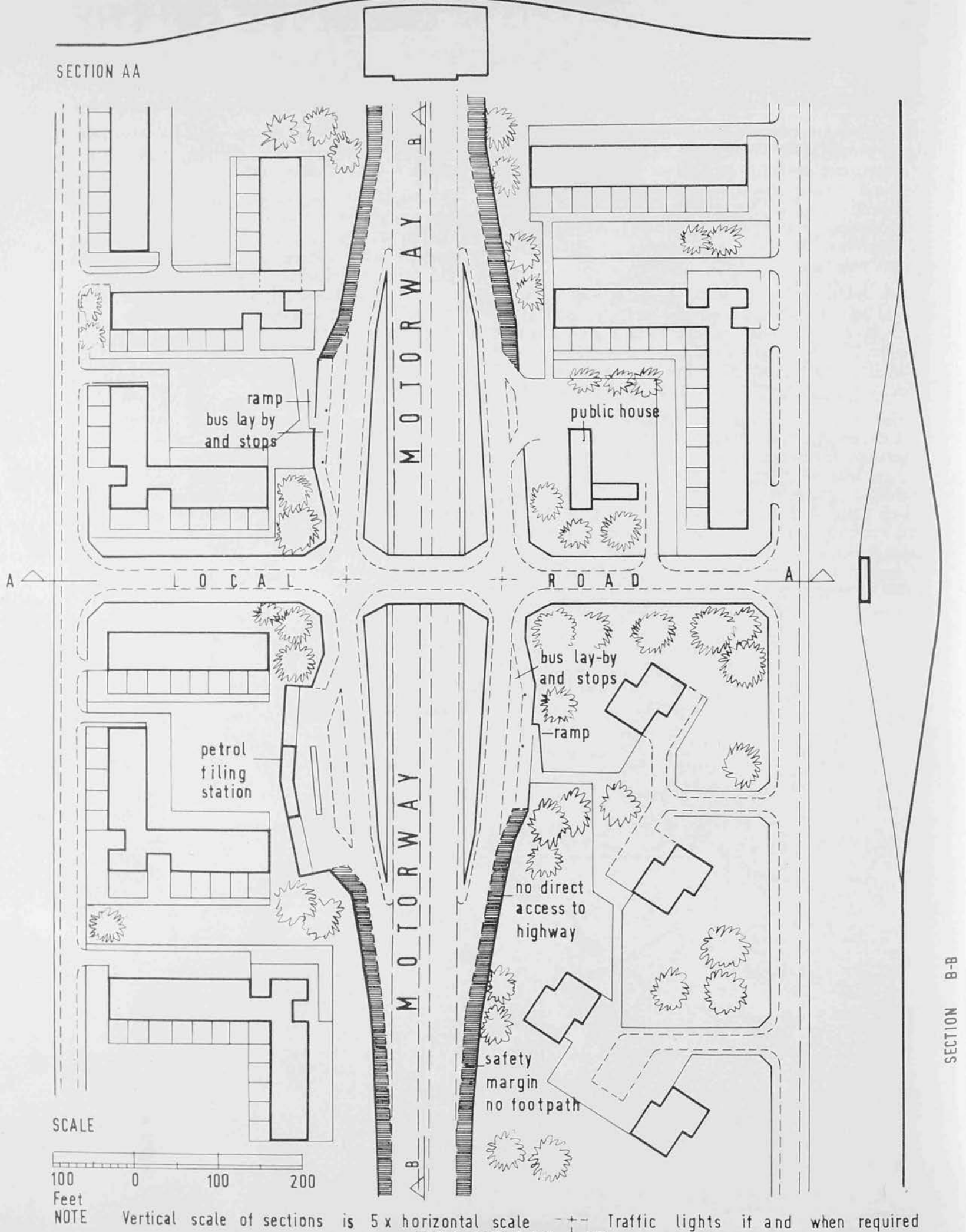
The position thus disclosed, together with the knowledge, to which reference has previously been made in Chapter 2, that the Development Plan highway proposals are based on an estimate of ultimate traffic which has already been exceeded, made it very evident that any new Highway Plan would have to contain additional new road proposals, and of course these in turn would have to be related to the changes in long distance traffic movements which would result from the construction of the national motorway system. [72]

Table 3

EXISTING CAPACITY STANDARDS

Two-lane carriageways	5,000 vehicles per day
Three-lane carriageways	9,000 vehicles per day
Four-lane carriageways	15,000 vehicles per day
Dual Two-lane carriageways	18,000 vehicles per day

TYPICAL CONNECTION OF MOTORWAY WITH LOCAL ROAD SYSTEM



HIGHWAY CAPACITIES

BROADLY SPEAKING, the roads in the Highway Plan can be divided into three categories, i.e., rural motorways, urban motorways and other main highways. [73]

Rural Motorways

The concept of these is now well understood—dual carriageway roads restricted to the use of specified classes of motorised vehicles, and provided with hard shoulders, grade separation at junctions, and no frontage access. [74]

The Highway Plan proposals in this category include the Northenden, the Sharston (part) and the Stockport East/West By-passes, the new roads or by-passes outside the Outer Ring Road, other than the Farnworth and Kearsley and the Bredbury By-passes, and also the Outer Ring Road itself, except that section of the Princess Parkway Motorway forming part of this road. [75]

Urban Motorways

These are only likely to differ from rural motorways in that junctions will in all probability be more frequent, and that a system of lay-bys for emergency use may be provided instead of continuous hard shoulders. [76]

In the urban areas the pedestrians and cyclists would be accommodated on the local road system, this latter system being connected to the motorways at specially designed interchanges. Diagram 17, page 26, suggests one way in which such a connection might be made. [77]

In the Highway Plan, urban motorway design has been applied to the motorways and by-passes within the Outer Ring Road, to the Inner Ring Road, the Broadway Extension and the motorway link to Rochdale, and also to the two by-passes and the section of the Princess Parkway referred to above. [78]

Design Capacities

The design capacities shown in Table 4 have generally been adopted. Roads designed as rural motorways could of course accommodate the volumes shown for urban motorways, but there would be a consequent reduction in the speed of traffic on these roads. [79]

Compared with rural motorways, it has been assumed that somewhat lower speeds would be acceptable on urban motorways and that con-

sequently, motor cycles and heavy goods vehicles, buses and coaches would require less accommodation. Therefore the following passenger car unit equivalents have been used for columns (3) and (4):

Motor cycles	0.75	
Private cars, light goods vehicles	1	
Heavy goods vehicles, buses and coaches	2	[80]

Table 4
DESIGN CAPACITIES IN PASSENGER CAR UNITS

Carriageway	Rural Motorway		Urban Motorway	
	16 hr. day (2 way)	Peak hr. (1 way)	16 hr. day (2 way)	Peak hr. (1 way)
	(1)	(2)	(3)	(4)
Dual two-lane	33,000	2,000	40,000	2,400
Dual three-lane	50,000	3,000	60,000	3,600

Columns (1) and (2) are based on the following passenger car unit equivalents:

Private cars, light goods vehicles and motor cycles	1
Heavy goods vehicles, buses and coaches	3

The figures in columns (1) and (3) of Table 4 are based on the assumptions that (a) two-way traffic during the 16 hour period is ten times the peak hour total for both carriageways, and (b) 60% of the total peak hour traffic is in one direction. (This is equivalent to a total daily flow of $16\frac{1}{2}$ times the peak hour flow in one direction.) [81]

In some cases, and particularly where the peak hour flow on urban motorways exceeds this proportion, appropriately higher peak hour capacities have been used up to maximum values of 3,000 and 4,500 passenger car units in one direction on dual two lane and dual three lane carriageways respectively. However, it is considered that these maximum capacities can only be attained where there is little "switching" between traffic lanes, and therefore lower figures have been applied where junction slip roads will be at frequent intervals. [82]

Other Main Highways

These comprise the remainder of the proposals, ranging from the widenings of existing roads which may achieve urban motorway standards as redevelopment of adjoining areas takes place, to the widenings of relatively unimportant main roads used for local traffic and retaining level junctions, roundabouts, signals, etc. [83]

In the former case the estimated costs (see Chapter 8) are based on the assumption that the urban motorway standard will only have been completely attained on those sections where large-scale redevelopment of the adjoining areas is likely to have been undertaken for the purpose of urban renewal during the next 20 years. On the remaining sections the estimates assume that the use of pedestrian guard rails, the provision of pedestrian subways or overbridges and the total prohibition of waiting at peak hour periods would be adopted to secure the required carriage-way capacity in the interim. [84]

Examples of such roads are the Stockport Road in Manchester, Manchester Road in Bolton, Oldham Road from the Inner Ring Road to the Failsworth By-pass, Hyde Road from the Intermediate Ring Road to the Outer Ring Road, Kingsway, Bolton Road/Broad Street in Salford, and the Intermediate Ring Road. [85]

In all other proposals, grade separation and restriction of access is proposed to the extent necessary to enable them to carry the ultimate estimated traffic. [86]

The design capacities shown in Table 5 have been adopted for main roads of the lowest category. [87]

Table 5
CAPACITIES OF MAJOR ROADS HAVING DUAL TWO-LANE CARRIAGEWAYS WITH CROSS TRAFFIC ON THE LEVEL AND LITTLE RESTRICTION OF ACCESS

<i>Carriageway</i>	<i>Passenger Car Units</i>	
	<i>16 hr. day (2 way)</i>	<i>Peak hr. (1 way)</i>
With some stationary vehicles allowed	20,000	1,250
No waiting allowed	25,000	1,500

The passenger car unit equivalents are those used for columns (3) and (4) of Table 4.

The estimated cost of many of the road widenings in the four northern County Boroughs and the areas outside the Outer Ring Road, and also within and to the south of Stockport, have been made on this basis. [88]

OTHER CONSIDERATIONS

The greatest importance is attached to the ultimate attainment of complete pedestrian segregation on all major urban roads, as only thereby can the appalling loss of life and limb which results from the contest between pedestrians and vehicles be prevented. Even in the case of roads carrying the smaller volumes of traffic, pedestrian

segregation is proposed at points where the pedestrian flow is substantial. [89]

The worst combination of pedestrian danger and carriageway obstruction arises where main roads have shopping frontages. Therefore, such main roads should be diverted from the shopping areas or, in the long term, all shops should be removed from them. The full attainment of complete segregation of shops and traffic will undoubtedly be a lengthy and complex operation. Fortunately, the redevelopment of many of the areas fronting to the existing main roads which are at present used for shopping purposes in the larger towns within the Area will form part of clearance and redevelopment operations, and the opportunity to establish new shopping centres away from these roads will thus be provided. [90]

It has long been recognised that main highways are the most expensive parking places for the stopped vehicle. It is proposed therefore that the extent to which convenient use of these is interrupted by loading and unloading operations should be lessened—even in the case of those proposals where the higher volumes of traffic are not expected in the future—by requiring off-street facilities whenever redevelopment arises. [91]

Many of the major proposals would include wide margins for landscaping. In the built-up areas the effect of the further use of land in this way may be off-set, to some extent at least, by securing a higher density of redevelopment in the form of tall buildings beyond these margins. Thus a satisfactory relationship between overall highway width and building height would be obtained. [92]

Even so, the relationship between land used for main highway purposes and the land remaining for building and ancillary uses must always be borne in mind, particularly near the heart of the regional and other town centres. [93]

In preparing the Highway Plan, due account has been taken of the major changes in traffic movement which will result from large scale changes in land use, including, for example, the proposals for the substantial expansion of Westhoughton. [94]

TRAFFIC GROWTH

The Road Research Laboratory have suggested that by the year 2010, when it is estimated the population of Great Britain will be 60 million persons, the total number of vehicles licensed will be 36 million, that is $3\frac{3}{4}$ times the number of vehicles licensed in 1960. [95]

On this basis, but assuming that the population in the Area remains static and that the ratio of vehicles licensed to population increases to the

national average, the number of vehicles licensed in the Area in the year 2010 would be about $4\frac{1}{2}$ times the vehicles licensed in the Area in 1960 (see Appendix D, page 78). [96]

After due consideration it was decided that a Highway Plan should be prepared on a traffic estimate amounting to $2\frac{1}{2}$ times the traffic in the Area in 1960. [97]

There were a number of factors which prompted this decision to which only the briefest reference can be made. [98]

In the first place, the estimate for the year 2010 looks a long way ahead and may be subject to changes arising from, for instance, new inventions which cannot be foreseen at present. Also, if the traffic problems of the more immediate future are to be substantially alleviated, it is essential that a new highway system be completed well before that time. Further, the cost of accomplishing the Plan must have some relationship to the monies which are likely to be made available and to the extent to which a part of the national labour force might be diverted to undertake the work involved. [99]

When the estimate of the cost of the Highway Plan based on the above traffic estimate became available, it seemed that little purpose would be served by attempting to produce a further Plan deliberately designed to accommodate a larger traffic increase, particularly bearing in mind that any attempt at re-casting the Plan to produce more highways would prejudice the planning relationship between land used for main highway purposes and for development within the main highway framework, to which reference has already been made in paragraph 93. [100]

Apart from these considerations, it will be appreciated that relatively few cases will arise where the estimate of future traffic on a particular highway coincides with the design capacity. The design capacity can of course only be varied by the addition or deduction of a complete traffic lane in each direction (other than where "reversible" traffic lanes are provided), and consequently there will generally be reserve capacity which can in effect be regarded as a "factor of safety". As far as it is possible to compute, the overall factor of

safety provided in the proposed Plan would appear to be at least 20 to 25 per cent. [101]

This does not of course make good the difference between the estimate of $2\frac{1}{2}$ times 1960 traffic which has been used and the estimate of $4\frac{1}{2}$ times referred to in paragraph 96. [102]

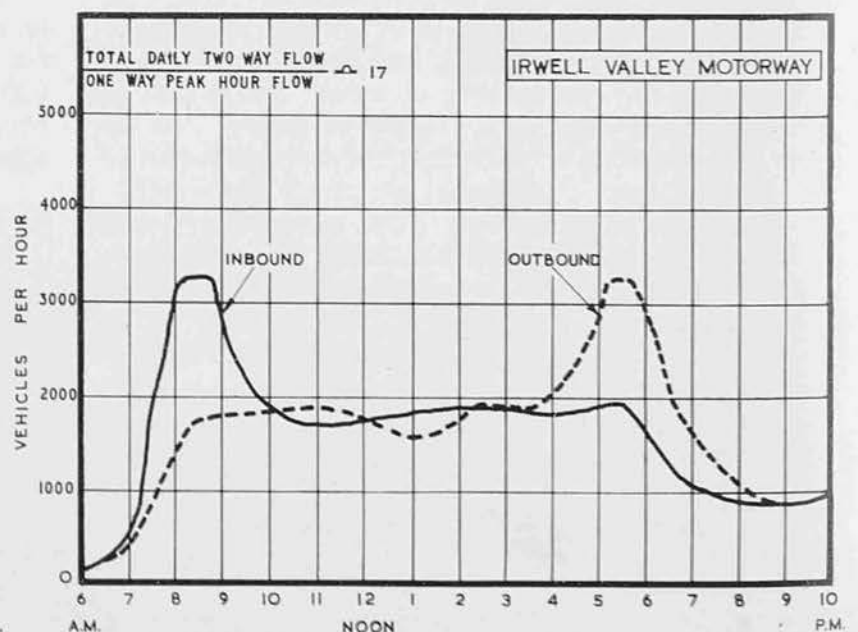
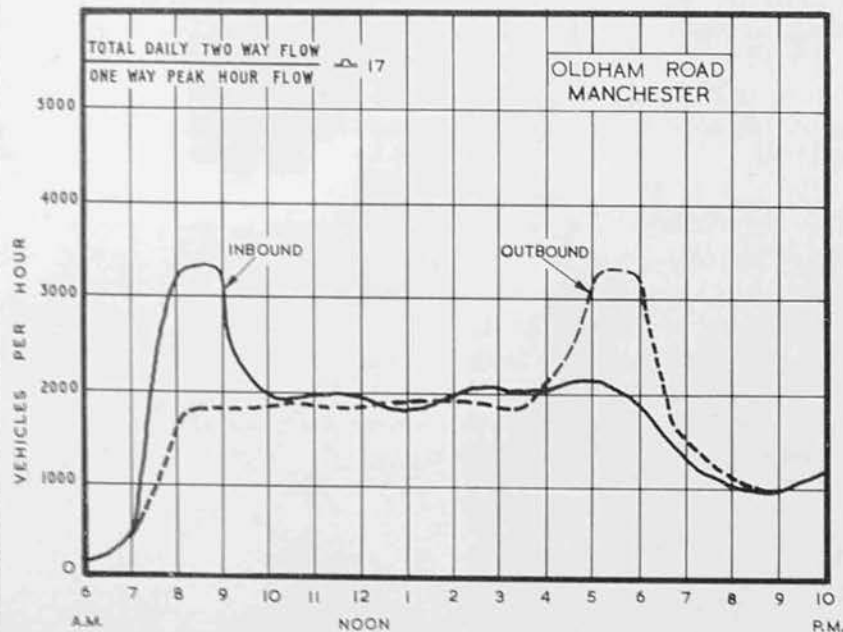
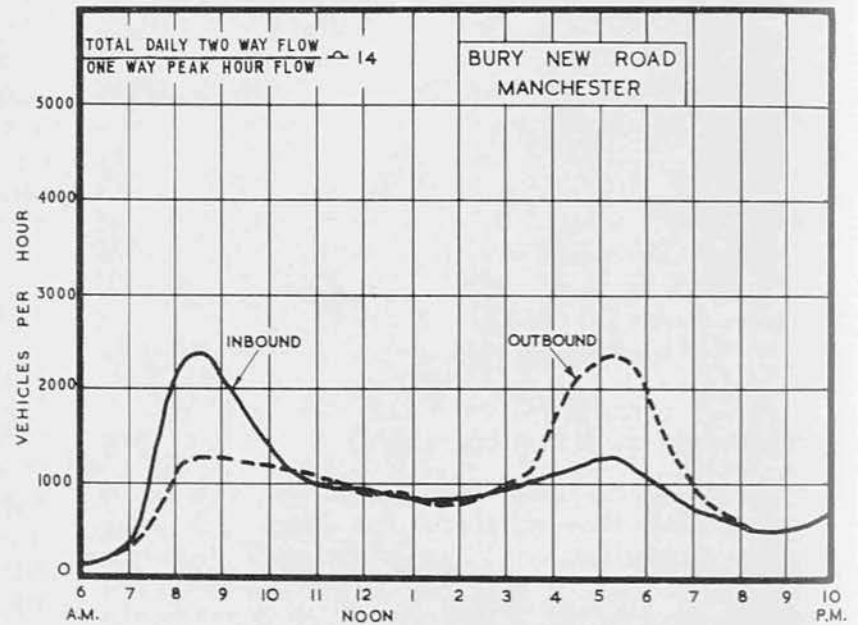
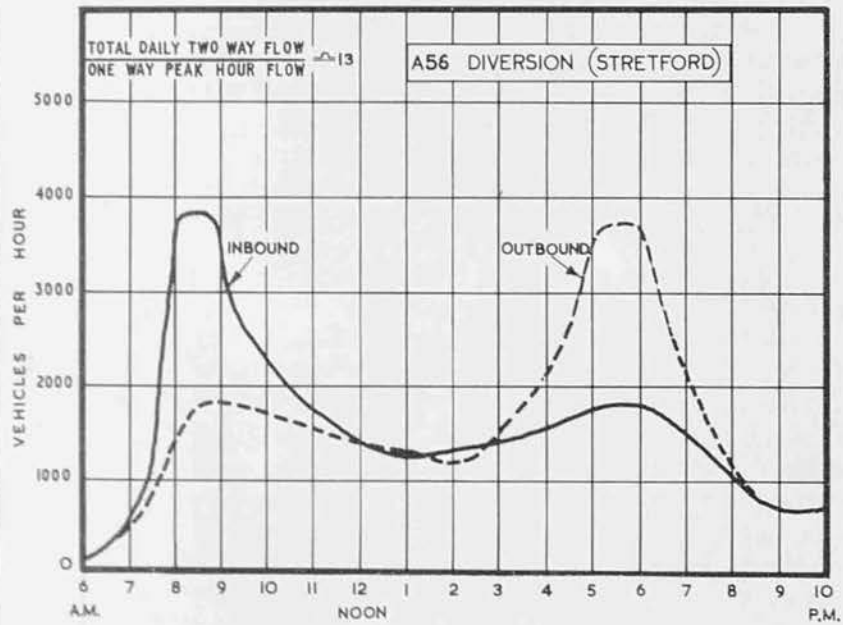
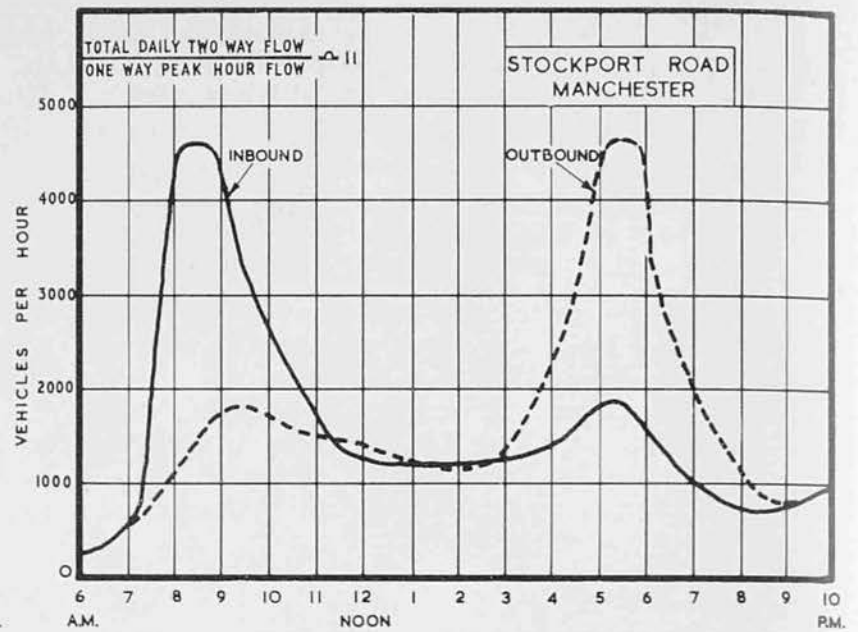
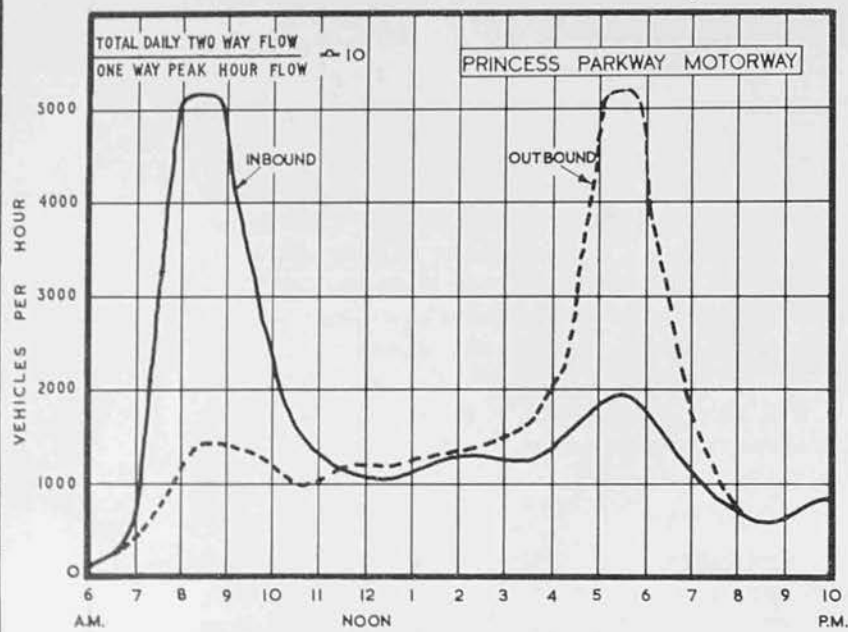
However, when any road project is about to be designed it will no doubt be done on the basis of a traffic survey taken at or near that time, and be related to such further information on traffic growth and trends as may then be available. Provided that, in the meantime, any new buildings have been set back to secure the adequate reservations for landscaping referred to in paragraph 92, it can then be decided whether any engineering structures forming part of the highway should be constructed so that an additional traffic lane in each direction could later be provided. [103]

The preparation of a long-term Highway Plan cannot be undertaken with scientific precision. It can only in general be related to an overall increase in traffic based more or less on present usage, subject to the variations arising from proposed changes in land use mentioned in paragraph 94. It may be reasonable to expect that increasing commercial and industrial traffic may conform to the present pattern, but new commuter routes will no doubt arise, particularly as more industrial workers become car owners. [104]

Furthermore, it is impossible to predict the extent to which the increasing number of private cars will be used for travel to and from work in the future. Although in the post-war years there has been no decrease in the extent to which vehicles are being used, it would seem reasonable to expect that in the future a considerable proportion of the increasing number of private cars will be used mainly for pleasure only, provided adequate public transport remains available for commuters (see Appendix D, page 78). [105]

It will be appreciated that all those matters relating to highway capacities and traffic growth are in effect complementary, and consequently must be considered together in an attempt to provide a reasonable balance, one against the other. [106]

ESTIMATED HOURLY TRAFFIC FLOWS (ULTIMATE)



THE HIGHWAY PLAN now proposed is shown on the folded map in the pocket at the back of this report. [107]

THE MAIN NETWORK

The Birmingham/Preston Motorway (M.6.), now under construction and due to be completed in 1963, will bring about a new distribution of traffic from the Midlands and beyond. Much of this traffic at present enters the Area through Wilmslow and Hazel Grove/Stockport. [109]

Therefore, it would seem appropriate to commence the description of the main network by indicating the location of this motorway on the Plan. It is shown in green colour crossing the bottom left-hand corner and passing to the west of Knutsford and to the east of Warrington. [110]

The southerly connection from the motorway into the Area is located west of Over Tabley, from which a new road (151) west of, and parallel to, the existing Chester road is proposed. [111]

At Millington, this road would cross the proposed Cheshire East/West Motorway (106)—linking north-west Cheshire and North Wales with Manchester—where a grade separated junction¹ would be provided. The latter road would connect with M.6 at Howshoots. It will be seen that from Millington two motorways into the regional centre are proposed. [112]

The one running due east, being part of the Cheshire East/West Motorway, would cross the River Bollin, on the boundary of the Area, into the south-easterly section of the Hale Urban District. Turning northwards, the motorway would enter Manchester and continue as the Princess Parkway Motorway (605) through lands which have been reserved in Wythenshawe for an extension of the existing Parkway. The road would bridge over the Timperley/Stockport railway line and the Altrincham Road (601 and 632) immediately to the north and continue through the existing Parkway over the River Mersey, following the line of Princess Road (606) to the Inner Ring Road (207) and then continuing in a modified form to Link Road 17/7 (603), and ultimately joining the City Centre Road (615) at the southern end of Lower Mosley Street. [113]

In the description which follows, reference will be made in brackets to the number against each of the proposals on the Plan. [108]

Junctions are proposed at Hale Road (404), at the Outer Ring Road (203)², the Wythenshawe Civic Centre Road (639), Altrincham Road, the proposed Sale Eastern by-pass (204), Barlow Moor Road (646), Mauldeth Road West (647), the proposed Manchester/Salford Inner Ring Road (207)², and Link Road 17/7. As will be seen from Diagram 18, page 30, this motorway will carry an exceptional volume of peak hour traffic and would be designed with 'reversible' traffic lanes. [114]

The other motorway connection into the regional centre from Millington would be formed by the Altrincham and Sale By-Pass (113), now placed in a more easterly position than in the Cheshire Development Plan so that comparatively short connections from Bowdon and Altrincham could be provided. Proceeding northwards on the original line west of Sale the road would cross the River Mersey and the M.62 (Stretford/Eccles By-pass) (152)—shown green on the plan—and then Chester Road on the south side of Stretford. [115]

From this point the motorway would continue as a by-pass (114) east of the Manchester/Altrincham railway, rejoining the existing Chester Road (at its present junction with City Road) and then proceed as a widening of that road to Link Road 17/7 and onwards (612) to the City Centre Road. Diagram 18, page 30, indicates the high peak hour traffic flow arising from commuter traffic. [116]

The by-pass last mentioned is a new proposal, but in the meantime some widening of the Chester Road will be required to deal with present traffic. However, in due course the town centre would be freed of through traffic. [117]

In the original Altrincham/Sale By-pass proposal, connections with the local road system in Bowdon, Altrincham and Sale were not envisaged, but junctions are now proposed in Bowdon from Charcoal Road (412), in Altrincham from Sinderland Lane (432), and in Sale from Carrington

¹ The term 'grade separated junction' indicates that one road would pass over or under the other with inter-connections between them. Grade separation is proposed at all junctions to the motorways and by-passes and on the sections of the roads listed in paragraph 85, page 28. To avoid repetition, grade separation will not be referred to again when connections and junctions are mentioned in this Chapter.

² All the radial routes into the regional centre would connect with the Outer Ring Road except the Cambridge Street extension (628) which, however, would connect indirectly via the Northenden By-Pass (204). All of them would also connect with the Intermediate Ring Road, including in due course the future southern continuation (647), and the Inner Ring Road (207). No further reference will be made to these junctions when describing the other radials.

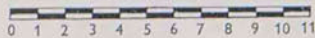
LANCASHIRE - YORKSHIRE MOTORWAY

LANCASHIRE SECTION

JUNCTION WITH MANCHESTER - PRESTON MOTORWAY
AND EAST LANCASHIRE ROAD A580

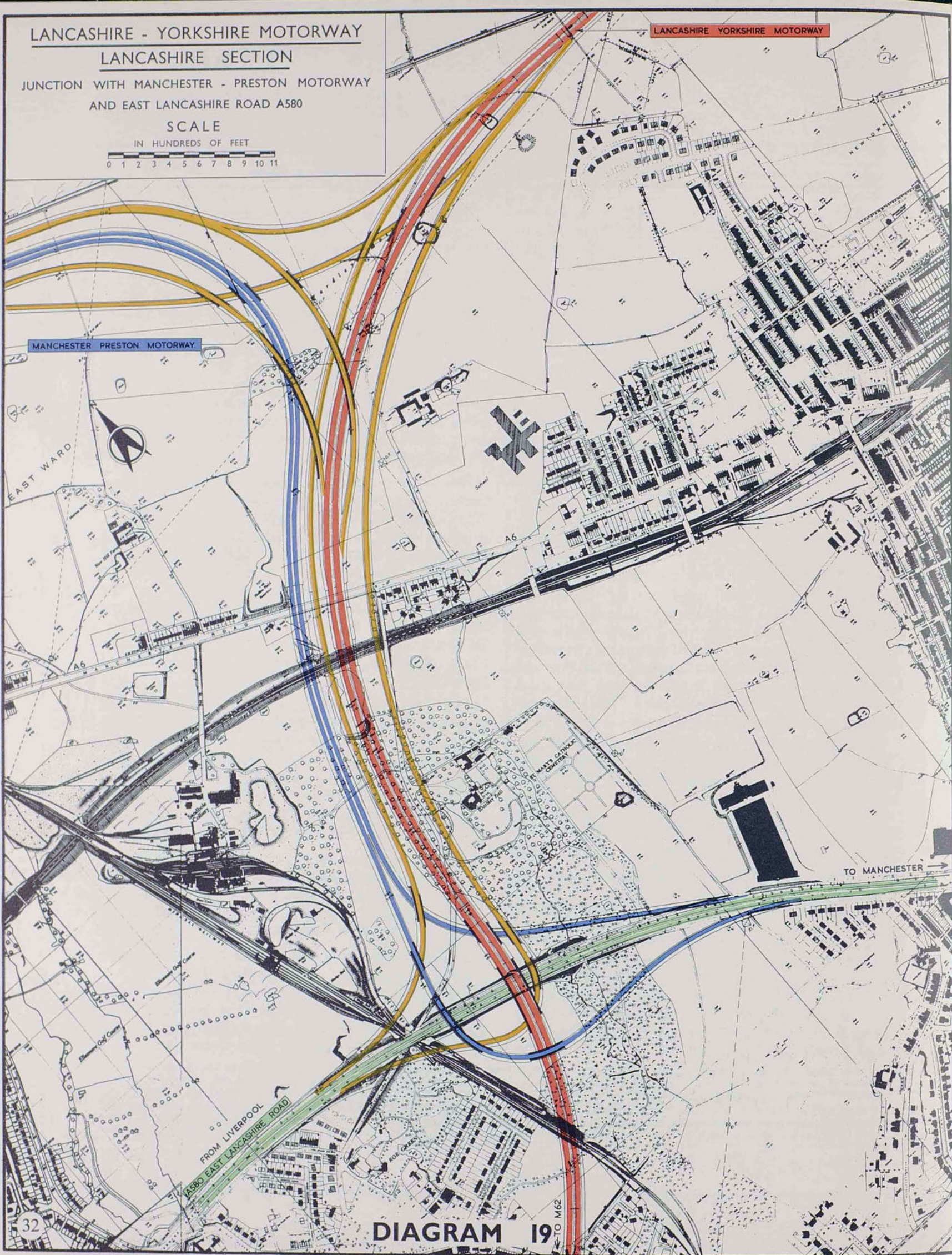
SCALE

IN HUNDREDS OF FEET



LANCASHIRE YORKSHIRE MOTORWAY

MANCHESTER PRESTON MOTORWAY



Lane (410), providing access to Carrington also. A connection would also be provided at the Chester Road crossing south of Stretford for vehicles to and from the south only. [118]

It is proposed that the motorway should be elevated in the vicinity of Trafford Bar, with a connection at this point over Talbot Road to Trafford Road (120) so that traffic to and from the Docks, the Trafford Park Industrial Estate and Stretford (via Chester Road) could use the motorway. [119]

The further radial road proposals are described by taking them in a clockwise direction, the next from the west being the proposed South Lancashire Motorway (206). This would carry traffic between south Liverpool and the Area, on a route by-passing Widnes and Warrington, to which connections would be made. [120]

This is a completely new proposal which, in combination with an improvement of the East Lancashire Road, would provide sufficient capacity for the estimated future Liverpool/Manchester traffic. The previous proposal to improve the existing Liverpool/Warrington/Manchester road, with by-passes at Huyton and Irlam, would no longer be sufficient. [121]

The road would connect with M.6 north of Warrington, cross the boundary of the area south of Astley Green, continue more or less parallel to the Manchester/Liverpool railway line, and pass north of the present centre of Eccles (thereby taking through traffic out of this centre). It would then cross the Salford boundary south of Hope Hospital, pass over Eccles New Road and proceed more or less parallel to and south of that road, skirting the north side of the Docks, cross Trafford Road and join the proposed Inner Ring Road in the vicinity of the junction of Tatton Street and Oldfield Road. From this point a connection, passing over the River Irwell to the junction of Water Street, Regent Road and Dawson Street, and then following the line of the latter street and Egerton Street, would be made with Link Road 17/7 (603) at its junction with Chester Road. [122]

A connection to the Eccles and Salford local road systems is proposed at the boundary of these towns, while the connection with the Intermediate Ring Road (Trafford Road) would provide access to the Docks and the Trafford Park Industrial Estate. [123]

The next radial road proposal is a widening of the East Lancashire Road (110) from the boundary of the area, through Worsley and Swinton, continuing in Salford (Bolton Road/Broad Street/The Crescent) (803, 804 and 805) to the Inner Ring Road, and then via Chapel Street and New Bailey Street to the City Centre

Road. Part of this road (804) is included in the Intermediate Ring Road. [124]

The proposed Manchester/Preston Motorway (109) is shown north of this again. It would absorb the through traffic at present using the existing Chorley Road through Worsley, which forms part of the A.6 main road (London to Carlisle). The motorway from the north-west would cross into Bolton for a short length north of Westhoughton and re-enter the Area at Hulton Lane Ends, then continue south of Farnworth and Kearsley joining the Outer Ring Road—here formed in part by the Lancashire/Yorkshire Motorway (132) and the M.62 Extension (504)—and the East Lancashire Road at Wardley. [125]

Two connections are proposed on this motorway, one being to the existing road system (317), and the more easterly with the proposed Farnworth and Kearsley By-pass (212). These will give access to Bolton to the north and to Westhoughton to the south. [126]

Diagram 19, page 32, illustrates an arrangement of interchanges at the junctions between the Manchester/Preston Motorway, the Outer Ring Road, and the East Lancashire Road, and of the carriageways between these junctions, where the ultimate daily flow will amount to 115,000 vehicles. [127]

The proposed Lancashire/Yorkshire Motorway (132) commences at the junction of the East Lancashire Road and the extension of M.62, and crosses the Plan in a north-easterly direction. For a length of five miles, passing between Whitefield and Prestwich, the motorway would form part of the Outer Ring Road (132), and then continue, to the south of Heywood, Rochdale and Milnrow, over the Pennines to join the A.1. [128]

From the western end of the Lancashire/Yorkshire Motorway, the first connection is with the existing Manchester/Bolton Road. To the east, the next junction is with the Irwell Valley Motorway (118), another new proposal, which could be constructed through the open area of the Irwell Valley for about half its length and then continue through proposed clearance areas in Salford which are shortly to be redeveloped. [129]

The Bury New Road intersection on the Lancashire/Yorkshire Motorway, would provide access to the existing road system northwards into Bury (116 and 124) and southwards into the regional centre (123). Diagram 18, page 30, shows the ultimate hourly flow on the latter section. [130]

The next connection with the Motorway is at the proposed Bury Easterly By-pass. This proposal, which is included in the appropriate Development

Plans, connects with the Bury/Burnley road near the northern boundary of Bury. At the junction of this by-pass with the Lancashire/Yorkshire Motorway the Outer Ring Road forms, in effect, a continuation of the by-pass. [131]

Proceeding north-eastwards, a junction with the existing main road between Heywood and Middleton (518) is shown. Following this, at the westerly connection from the Motorway into Rochdale and Oldham (205), it will be seen that a new road to Middleton (205), joining Rochdale Road at Slattocks, and also one to Manchester via Broadway (211) are proposed. [132]

It is considered that the Broadway proposal would form the principal route between the regional centre and Yorkshire, and that consequently Oldham Road (626/627) and the Fails-worth By-pass—a new proposal (122)—up to the Broadway connection, would in due course become the most heavily used northern radial road to and from the centre. Diagram 18, page 30, indicates the ultimate hourly traffic flow on Oldham Road, Manchester. [133]

The last motorway connection within the Area, at Milnrow, would provide the easterly links to Rochdale (576) and Oldham (544). [134]

The Farnworth and Kearsley By-pass (212), with a link (505) from the Manchester/Preston Motorway, the Bury Easterly By-pass and the Rochdale and Oldham connections with the Lancashire/Yorkshire Motorway, would reduce the through traffic in the four northern County Boroughs. For instance, traffic from the Manchester area to Preston could use the Irwell Valley Motorway, a short section of the Lancashire/Yorkshire Motorway, and then the Manchester/Preston Motorway, virtually clear of the developed areas in Salford, Swinton and Worsley, without passing through either Bolton or Chorley. North/south traffic to and from the Manchester area could use the Bury Easterly By-pass, and much of the Yorkshire traffic at present passing through Rochdale and Oldham would no longer do so. [135]

The construction of the sections of the Manchester/Preston Motorway within the Area, and of the Lancashire/Yorkshire Motorway west of the Bury Easterly By-pass, together with that By-pass and the Irwell Valley Motorway, would also effect a considerable relief to the existing East Lancashire Road (110) from the Outer Ring Road and its continuation through Salford (803, 804 and 805), and to the existing Bury New Road (123, 801 and 616). [136]

Reference has been made to the major radial roads into the regional centre round to Oldham Road. The next radial is the Ashton New Road (642 and 528) where a widening of Every Street at

its western end would provide an adequate approach to the Inner Ring Road (207). Otherwise, only junction and local improvements are included in the highway proposals. [137]

Parallel to the latter is Ashton Old Road (635/526), forming a continuation of Link Road 17/7 (603) to Ashton-under-Lyne, Stalybridge and the existing routes over the Pennines. This road and Hyde Road carry a considerable volume of heavy traffic to and from South Yorkshire (Sheffield). A widening of both roads is proposed to the boundary of the Area, with by-passes of the centres of Ashton-under-Lyne (506), Denton (112), and Hyde (105). [138]

After Hyde Road (622/104) the Stockport Road (210), connects the regional centre with the centre of Stockport and continues in a south-easterly direction to Hazel Grove and the boundary of the Area towards Disley. The northern end of this road carries a considerable amount of commuter traffic (see Diagram 18, page 30). At this end the radial would join the City Centre Road (648). The shopping centres of Levenshulme and Longsight, in Manchester, and the centre of Stockport would be by-passed, while at its southern limit the road would be realigned (126 and 127). A junction would be made with the Stockport East/West By-pass (855). [139]

The next radial route would be provided by a widening of Princess Street, Upper Brook Street (602), Anson Road (629), Birchfields Road (637) and Kingsway (608) in Manchester, and would continue through the recently constructed Kingsway Extension (631) with widenings of Wilmslow Road (402 and 403), and a diversion to the east of the Wilmslow shopping centre and then to west of the existing road to the boundary of the Area at Alderley Edge (403). A junction with the Sharston By-pass (108) is proposed for traffic to and from the south only. [140]

To the west again is the radial road from the regional centre to the Northenden By-pass (204). This would comprise a widening of Cambridge Street, a new road (609 and 638) southwards to the junction of Wilmslow Road and Palatine Road, and then a widening of the latter road (628). This road could in due course become valuable as a relief road to the Princess Parkway Motorway. [141]

The circle has now been completed, although the radial between Sale and the regional centre has not been mentioned. However, this is described in paragraph 145. [142]

A DESCRIPTION OF THE RING ROADS now follows. [143]

Commencing from the junction of the Northenden By-pass with the Princess Parkway

Motorway, and again taking the description in a clock-wise direction, the Outer Ring Road is formed by the proposed Sale Eastern By-pass (204), passing through the open lands to the south of the River Mersey, and connecting at its western end to the existing M.62 (152), which of course also forms part of the Ring Road. [144]

Between the Princess Parkway Motorway and the Altrincham and Sale By-pass a junction is proposed with the local road system in Sale to the south and with a radial route to the north provided by a new bridge over the River Mersey (209), connecting via Hardy Lane with Mauldeth Road West (643), and following Withington Road and Chorlton Road (643 and 574) into the regional centre. Widenings of these roads are proposed. [145]

Beyond the proposed junction of M.62 with the Altrincham and Sale and the Stretford By-passes, a proposed road (502 and 508) giving access into the centre of the Trafford Park Industrial Estate is shown. [146]

From the junction with the South Lancashire Motorway a widening of M.62 is proposed (524) and the motorway would then continue (504) to the junction of the East Lancashire Road and the Lancashire/Yorkshire Motorway. This motorway (132) would then form part of the Outer Ring Road (as previously mentioned) until the Bury Easterly By-pass (121) junction, where the Ring Road (201) would continue south of Middleton to Failsworth, and then follow a southerly direction (202), west of Ashton-under-Lyne, Audenshaw and Denton, through Bredbury and onwards to the east of Hazel Grove. [147]

From the junction with the proposed diversion of Buxton Road south-east of Hazel Grove the southern section of the Outer Ring Road (203) passes to the south of Bramhall and Cheadle Hulme joining the Princess Parkway Motorway (605) near the Manchester City boundary in Wythenshawe. This southern section, and the eastern section (see paragraph 147) through Bredbury and to the east of Hazel Grove, were not included in the Cheshire Development Plan, but nevertheless development has not been permitted on the line of the road. [148]

When the southern section of the Outer Ring Road is constructed a connection could be provided to the Manchester Airport, and in the meantime Airport traffic might have access to the Princess Parkway Motorway by a grade separated junction which could later form part of the junction for the Outer Ring Road. [149]

It will be seen from the Plan that the remaining section of the Outer Ring Road is formed by part of the Princess Parkway Motorway. The Plan indicates in dotted red (644) a section of the

Outer Ring Road which was proposed in the Manchester and District Regional Plan of 1945. Again, this proposal was not included in the Manchester Development Plan, but the line of the road, known as the Western Parkway, has been preserved. There is little doubt that the construction of this section of road will be required in due course, not only because the use of part of the Princess Parkway Motorway as part of the Outer Ring Road may well cause this section to become overloaded, but also because the continuation of the Outer Ring Road on the dotted red line would provide a very valuable relief route into the regional centre via the Mauldeth Road West, Withington Road, Chorlton Road radial route (referred to in paragraph 145). [150]

A DESCRIPTION OF THE INTERMEDIATE ZONE PROPOSALS now follows. [151]

To the north of and parallel to the southern section of the Outer Ring Road a new route is shown which incorporates proposals contained in the appropriate Development Plans. From the western end, at the junction of the Sale Eastern By-pass (204) and the Princess Parkway Motorway (606), it includes the Northenden By-pass proposal (204) and part of the Sharston By-pass proposal (108), then continues eastwards to form the Stockport East/West By-pass (855) through the Mersey Valley north of Cheadle Heath, by-passes the centre of Stockport (851) and proceeds in a north-easterly direction (129) to by-pass Bredbury on the north side (130) and join the Mottram Old Road (130/131) at its junction with Stockport Road, Hyde (409). This proposal would provide for the substantial movement of traffic between the Stockport area in the south-east and the north west, including the Trafford Park Industrial Estate which was disclosed in Diagram 12, page 20, and referred to in paragraph 56 of Chapter 4. [152]

The Development Plan proposals connected the Sharston By-pass with Stockport Road, Cheadle Heath at Boundary Bridge, leaving traffic to the east of this to use the existing roads, Stockport Road, Brinksway and Chestergate, but these roads could not be made to accommodate the traffic now envisaged. [153]

Widenings on the local route provided by Seymour Grove (555), Manchester Road (575), Barlow Moor Road and School Lane (646) are mainly confined to improving junctions and the narrower sections. [154]

When the Manchester and District Regional Planning Proposals were produced in 1945, three ring roads, outer, intermediate, and inner, were envisaged as complete circuits, the outer following the route already described (including Western

TRAFFIC FLOW ON EXISTING NETWORK



Scale of Vehicles

1960

1980

10,000

25,000

20,000

50,000

40,000

100,000



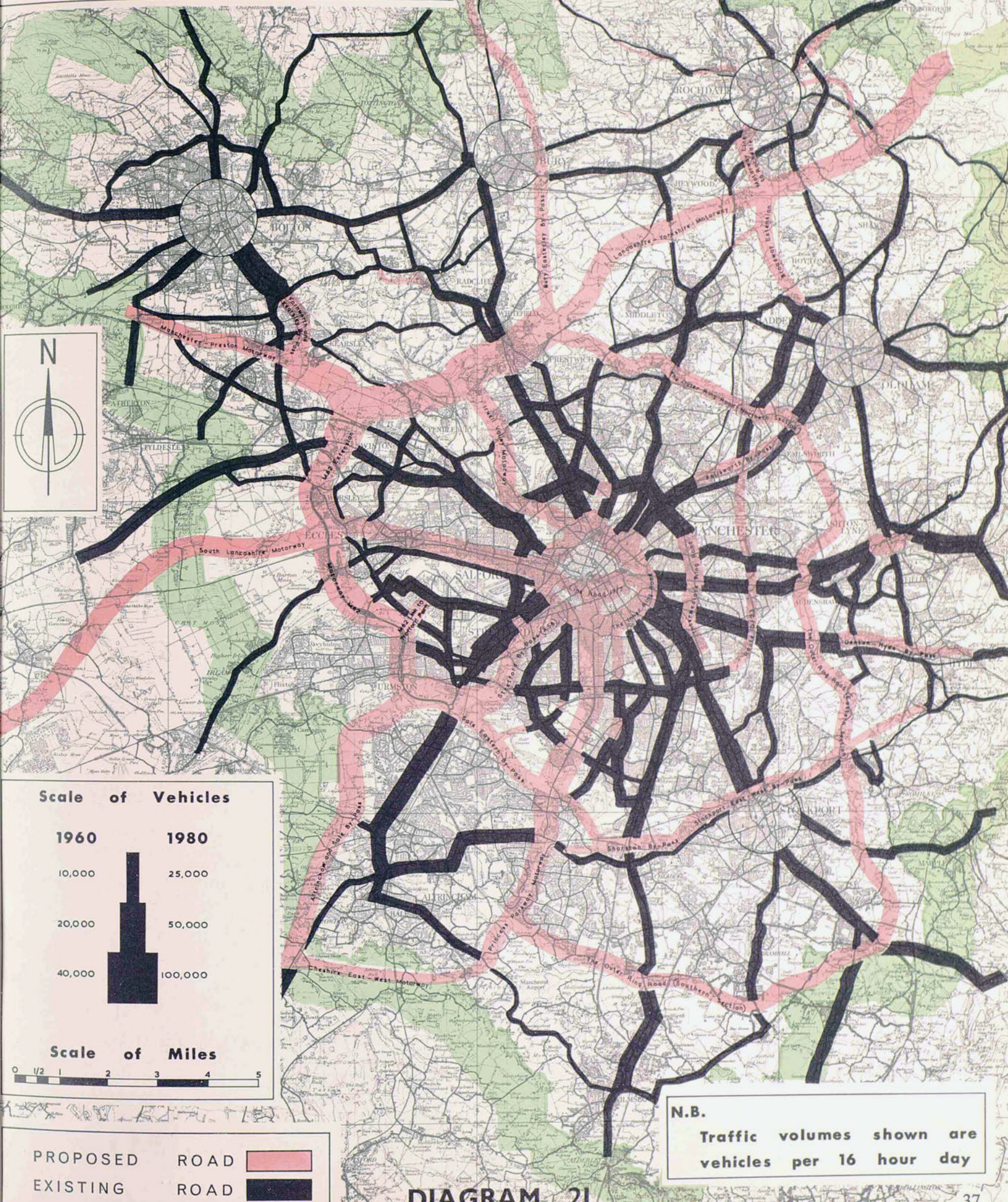
Scale of Miles



N.B.

Traffic volumes shown are vehicles per 16 hour day

TRAFFIC FLOW ON ULTIMATE NETWORK



Parkway), the intermediate with a high level bridge over the Ship Canal just east of the present Trafford Road swing bridge, Salford, and the inner with a bridge over the Bridgewater Canal north-east of the Cornbrook Wharf of the Pomona Docks on the Manchester/Salford boundary. [155]

These proposals were changed when the Manchester and the Salford Development Plans were produced and a compromise road system was adopted which connected the southern section of the Inner Ring Road with the Intermediate Ring Road at the Trafford Road swing bridge. Thus, the southern section of the Intermediate Ring Road in Manchester and the western arc of the Inner Ring Road in Salford were abandoned. [156]

However, a southern closure of the Intermediate Ring Road circuit from Trafford Road to Stockport Road, Manchester was to be obtained by an improvement of Seymour Grove, Manchester Road, Wilbraham Road, Moseley Road and a new continuation of the latter road to Stockport Road. [157]

Bearing in mind the changes in traffic distribution which will arise from the provision of M.6, it is now considered that a better link with the Intermediate Ring Road might be provided south of the Manchester Central/Guide Bridge railway line, by the continuation of Mauldeth Road West (647) through to the Stockport Road (Manchester) connection with the Ring Road. From this point the road could continue northwards (645) to the Outer Ring Road by following the line of Route D/23 (so described in the City of Manchester Plan, 1945), thus completing a valuable cross route between M.6, the eastern section of the Intermediate Ring Road and east Manchester beyond. [158]

The proposed link road and its continuation to the Outer Ring Road are shown dotted on the Highway Plan as projects for which the lines should be reserved but construction not undertaken until the remainder of the Plan has been completed. No provision for these proposals is contained in the Highway Plan estimates. [159]

Commencing from the junction of Chester Road and Trafford Road in a clockwise direction, the proposal for the Intermediate Ring Road in Salford comprises the widening of Trafford Road, Windsor Street, Albion Street (807), part of Broad Street (804), Broughton Road, Cromwell Road and Great Cheetham Street, (808) and a diversion into Elizabeth Street. In Manchester the proposals comprise a widening of Elizabeth Street (617), a diversion into Queens Road at the railway bridge (621), and widenings and diversions along Queens Road, Hulme Hall Lane, Mill Street, Grey Mare Lane and Pottery Lane to Textile

Street (618). From this point, a new section of road (619) would extend southwards to North Road, which would be widened and connected (620) at its southern end into Stockport Road. [160]

A considerable volume of industrial traffic at present uses this route through the existing road system. With the diversions proposed it would become still more attractive. The Ring Road substantially follows the line provided in the Salford and Manchester Development Plans. [161]

It is now proposed that the Inner Ring Road (207) should be resuscitated by the construction of a viaduct over the Cornbrook Wharf of the Pomona Docks (slum clearance redevelopment having taken place on the original line). [162]

The survey has emphasised the great importance of this road in the future. It is considered that with the over-pass of these Docks a further high level bridge near Trafford Road would not be required. [163]

So far as the Inner Ring Road and Link Road 17/7 (603) are concerned, the construction of the latter and of the northern arc of the former would form a by-pass of the regional centre which would undoubtedly prove of tremendous value until traffic increases to such an extent that the southern arc of the Inner Ring Road becomes necessary. This would arise when traffic at the Chester Road junction with Link Road 17/7 exceeds the capacity which that junction can be made to accommodate. [164]

Although, as just stated, the Inner Ring Road is a most important part of the main network, it is convenient to describe it in detail in the later sections of this chapter dealing with the highway proposals for the centre of Manchester (page 45), and for Salford (page 53). [165]

The Effect of The Main Proposals

Diagram 20, page 36, shows to scale the present traffic using the existing highways in the Area and the amount of traffic which would be using these highways in 1980 if of course they were wide enough for the purpose. [166]

It is only necessary to know the conditions which now arise on any road and to think of two and a half times the present traffic trying to get through the same road in 1980 to realize how urgent the provision of new highways and the improvement of existing highways have become. [167]

Diagram 21, page 37, shows to the same scales how the present traffic and the 1980 traffic would be distributed through the new highway system if it were available. [168]

The Committee were not authorised by their respective Authorities to produce a list of recom-

mended priorities, but a study of Diagram 21 quickly discloses the effect on the distribution of traffic through the adjoining main roads which would result from the construction of certain of the new proposals. [169]

It might well be relatively easy to determine

the earlier priorities which should be adopted throughout the Area, other than those within the four northern County Boroughs where the individual priorities might be difficult to compare. [170]

THE COUNTY BOROUGH PROPOSALS

In virtually all the town centres within the Area, the principal shopping streets are either continuations of the radial roads or have direct connections with them. Consequently, there is invariably an intermingling of substantial traffic volumes with a high concentration of pedestrians. [171]

There are generally no central bus stations and therefore the frequency of bus stops in the centres adds to the congestion and causes delay to vehicular traffic. The majority of bus turning is done on the public highway. [172]

Where stores and shops have a rear access, it is generally inadequate for the larger commercial vehicles to negotiate. Consequently many deliveries are made to the front of the premises. [173]

Although in some cases open spaces are available

which are used for car parking purposes, these are invariably inadequate to fulfil even present-day requirements. [174]

In order to remedy these conditions, provision must be made for the by-passing of as much traffic as possible and for long-term redevelopment which will provide pedestrian shopping precincts and reduce to a minimum the intermingling of pedestrians and vehicular traffic. Adequate loading and unloading accommodation must also be secured from rear access roads provided for the purpose. [175]

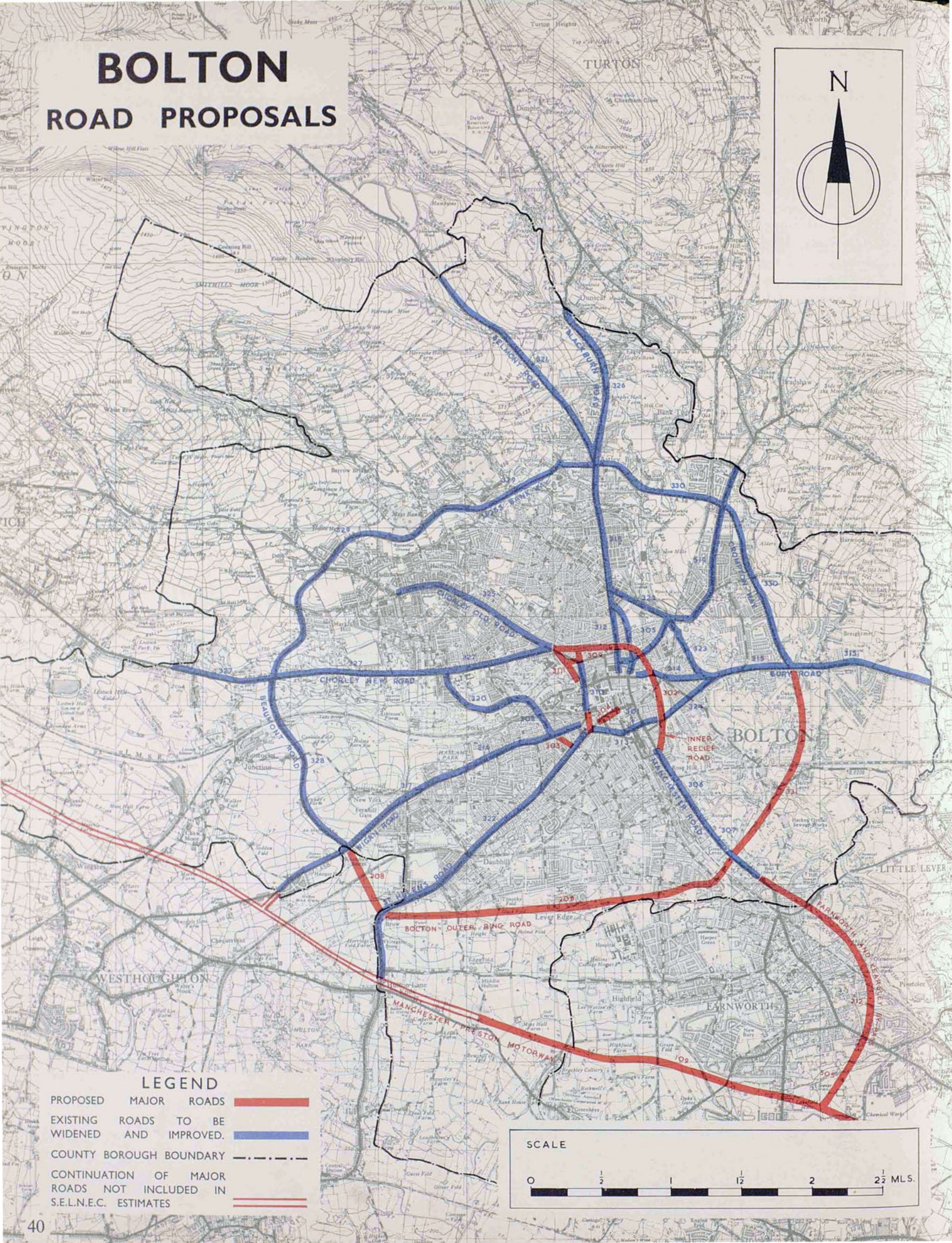
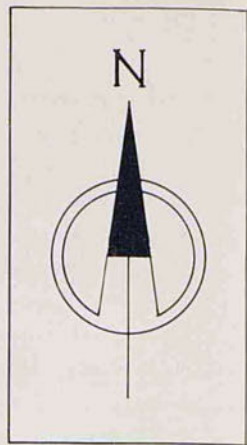
A reasonable standard of parking space must be provided in all new commercial buildings, while in addition adequate off-street parking should be made available for commuter vehicles on the periphery of the centres. [176]

The provision of pedestrian shopping precincts, as in the Lijnbaan Shopping Centre, Rotterdam, reduces to a minimum the intermingling of pedestrians and vehicular traffic.



BOLTON

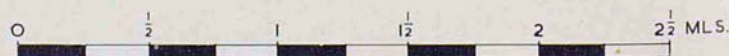
ROAD PROPOSALS



LEGEND

- PROPOSED MAJOR ROADS —
- EXISTING ROADS TO BE WIDENED AND IMPROVED. —
- COUNTY BOROUGH BOUNDARY - - - -
- CONTINUATION OF MAJOR ROADS NOT INCLUDED IN S.E.L.N.E.C. ESTIMATES =

SCALE



BOLTON (Population 161,000)

The pattern of the main roads of the town is formed by eight radial roads converging on the town centre. A ring road is partially formed, from Wigan Road in the south-west to Bury Road in the east, by Beaumont Road, Victoria Road, Stapleton Avenue, Moss Bank Way and Crompton Way, approximately enclosing the western, northern and north-eastern developed areas of the town and acting both as a by-pass road and a distribution road. The roads in the town centre itself are in 'grid-iron' pattern, and the central area conditions referred to in paragraphs 171 to 176 generally apply. [177]

Subsequent to the main traffic survey of the Area, a local traffic survey has indicated that 60 per cent of the vehicles traversing the central area had no business there. Therefore the provision of an Inner Relief Road to cater for this by-passable traffic is proposed. Redevelopment of the town centre, several sections of which are imminent, will provide opportunities for reducing the intermingling of pedestrians and vehicular traffic by the provision of pedestrian shopping precincts and other means. Provision is to be made for a bus station for inter-town and local services in the vicinity of Soho Street, which will provide vehicular free pedestrian access both to Trinity Street Railway Station and to the proposed new shopping area between the bus station and the Town Hall. [178]

The waiting of vehicles on the major and most of the minor streets in the central area must be controlled and to this end two sites have already been selected for multi-storey car parks with a combined capacity of approximately 850 cars. It is estimated that the ultimate requirement for off-street parking is between 4,000 and 5,000 vehicles. [179]

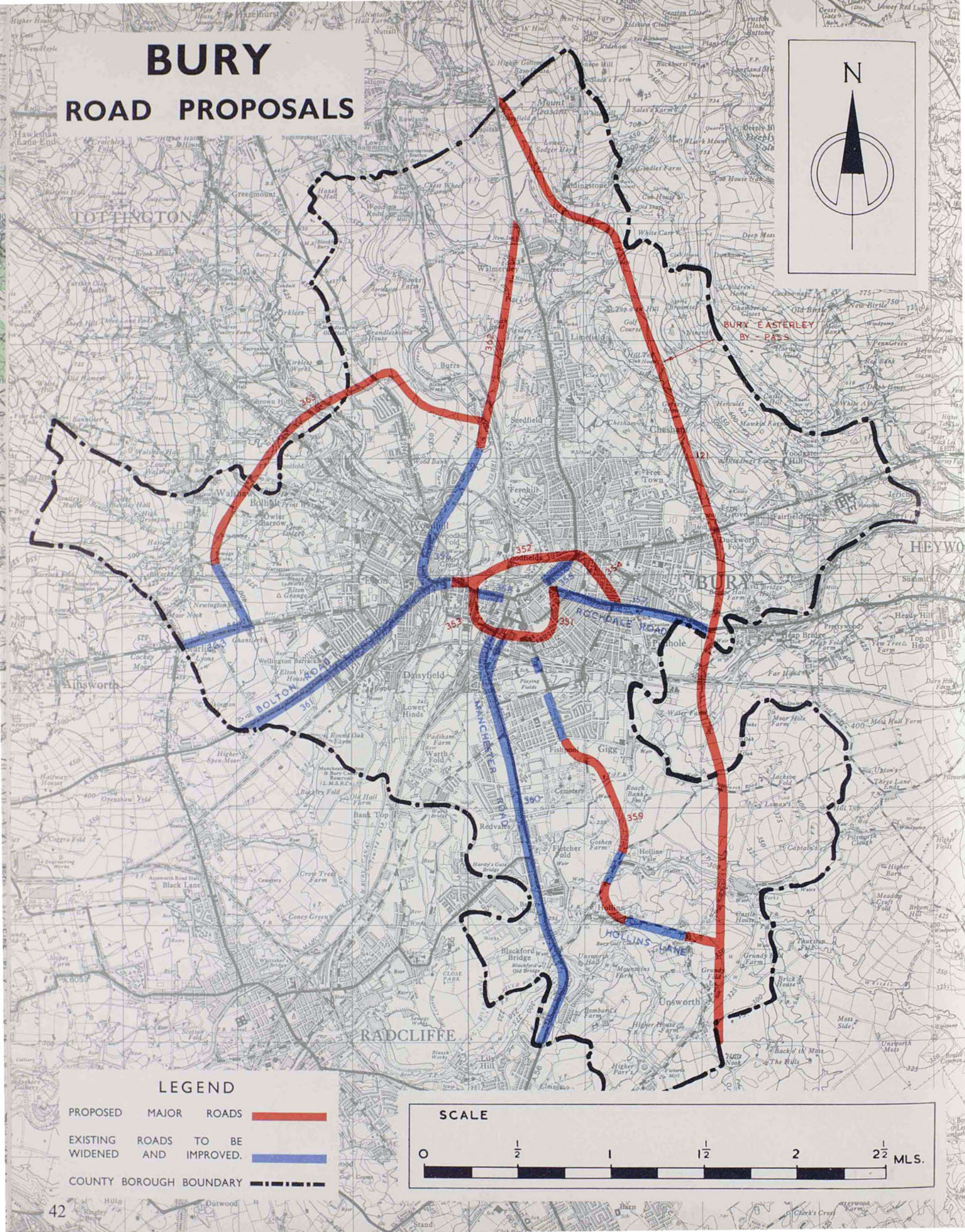
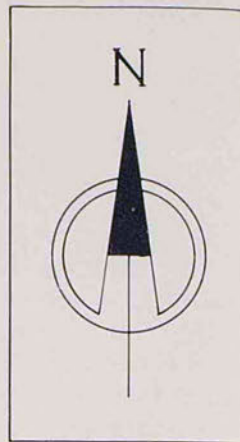
Plate 5, opposite, shows the highway proposals for the town, which largely comprise the widening of the eight radial roads referred to previously. Two of the radial roads, Deane Road/Wigan Road (316 and 317) and Manchester Road (306 and 307), will connect with the Manchester/Preston Motorway (109), the latter via the Farnworth and Kearsley By-pass (212). Manchester Road is the only radial road in Bolton which may ultimately carry more than 40,000 vehicles per day. [180]

The proposals provide for the completion of the existing outer ring road in the southern (208) and eastern (331) sectors, thereby substantially enhancing the value of the road as a by-pass of the built-up area for traffic to and from all the radial roads. Part of this new section of ring road, from Wigan Road to Manchester Road, is contained in the Development Plan proposals. The Inner Relief Road previously referred to would envelop the central area, and be provided by improving and, where required, realigning Trinity Street (301 and 313), Crook Street, Moor Lane, and Marsden Road (310), which lie to the south and west of the central area. The remainder of the relief road on the north (309) and east (302) sides of the area would be new roads, as contained in the Development Plan, but the line has been revised to route them somewhat further out from the central area. [181]

Other new roads (303 and 311) are proposed in and adjoining the central area, while the remaining proposals comprise widenings of existing roads to the north-east of the town centre. [182]

The estimated total cost of these works within the Borough is £14,470,000. [183]

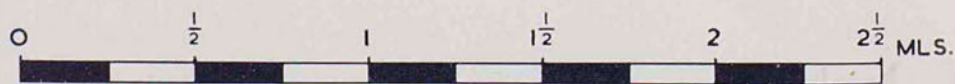
BURY ROAD PROPOSALS



LEGEND

- PROPOSED MAJOR ROADS —
- EXISTING ROADS TO BE WIDENED AND IMPROVED. —
- COUNTY BOROUGH BOUNDARY - - -

SCALE



BURY (Population 60,000)

The existing road pattern is complicated by the division of the town by the River Irwell, which flows through it from north to south, so that the radial roads from the western part of the County Borough converge on the single bridge over the river, known as Bury Bridge. The town centre is located on the east side of the river and here the development spreads from it through lengthy radial roads to the north and south and two easterly roads, one to Heywood and Rochdale and the second directly to Rochdale. [184]

The central area conditions referred to in paragraphs 171 to 176 are generally applicable, with the large majority of through traffic concentrating in the street named "The Rock". [185]

Plate 6, opposite, shows the highway proposals for the town. As mentioned in paragraph 46, page 13, the north to south through traffic would be diverted from the centre of the town by the construction of the Bury Easterly By-pass (121), but nevertheless an inner relief road system is proposed. [186]

On the north side of the town centre this would be formed by a new road (352 and 354) from Bury Bridge, crossing Walmersley Road at Moorgate, and continuing in a south-easterly direction to Rochdale Road at its junction with Bond Street. This road would act as a by-pass of the town centre for east/west traffic (Rochdale/Bolton). The other new road (351 and 353) would encircle the town centre on the south side from Bury Bridge, crossing Manchester Road, Knowsley Street and Market Street, and at its easterly end joining Rochdale Road at The Rock. A widening of The Rock (355), from Rochdale Road to Walmersley Road, would provide a connection between the two new roads, and a widening of Rochdale Road (357), from the new town centre road to the inner relief road, would complete the relief road proposals. These would not only remove through traffic from the centre, but also act as distribution roads and enable pedestrian precincts to be formed in the redevelopment of the centre. The widening of Bolton Street (358), from Market Place to its junction with the inner relief road at Bury Bridge, and the widening of The Rock (355) between Union Street and Cross Street are proposed to deal with the local traffic within the town centre. [187]

Immediate central area redevelopment proposals provide for parking over 900 vehicles, so increasing the off-street parking provision to some 1,500

vehicles. Further foreseeable redevelopment will add accommodation for another 480 vehicles. The provision of an omnibus station is also proposed. [188]

The principal radial road proposal would provide a southerly connection (359) from the town centre to the Bury Easterly By-pass. This would involve the widening of Market Street from Wellington Road to Gigg Lane and the construction of a new road crossing the River Roch and incorporating part of Croft Lane and Hollins Lane. [189]

The other road improvement proposals on the east side of the River Irwell are a continuation of the widening of Rochdale Road (357) from the proposed northern inner relief road to the Bury Easterly By-pass and a widening of Knowsley Street and also of Manchester Road (360) from the southern inner relief road to the Borough boundary. [190]

West of the river the proposals provide for the widening of Bolton Road (361), the widening of Ainsworth Road from Dow Lane to the Borough boundary and a widening of Dow Lane itself, with a new road (363) continuing in a north-easterly direction crossing Tottington Road (near its junction with Scobell Street just outside the Borough boundary) and Brandlesholme Road, and then turning south-eastwards to join Woodhill Road. A new road (362) is proposed continuing northwards from Woodhill Road to join Burnley Road at its junction with Walmersley Road. In this way a second bridge over the River Irwell would be available for north to west traffic. The widening of Woodhill Road and Crostons Road (356) is also proposed to connect this outer local traffic route with the inner relief road at Bury Bridge. [191]

The proposed southerly connection to the Bury Easterly By-pass from the town centre and the new roads referred to in paragraph 191 were originally included in the Development Plan, but were deleted by the Minister. The inner relief road system, except for the northern section from Bury Bridge to Moorgate (352), is an entirely new proposal. [192]

Bury is an expanding town with land available for further development, and the road proposals are designed to facilitate the residential and industrial expansion which is expected. [193]

The estimated total cost of the road works within the Borough is £4,225,000. [194]

LINK ROAD 17/7 - MANCHESTER

JUNCTIONS WITH CHESTER ROAD [A56] AND PRINCESS ROAD EXTENSION.

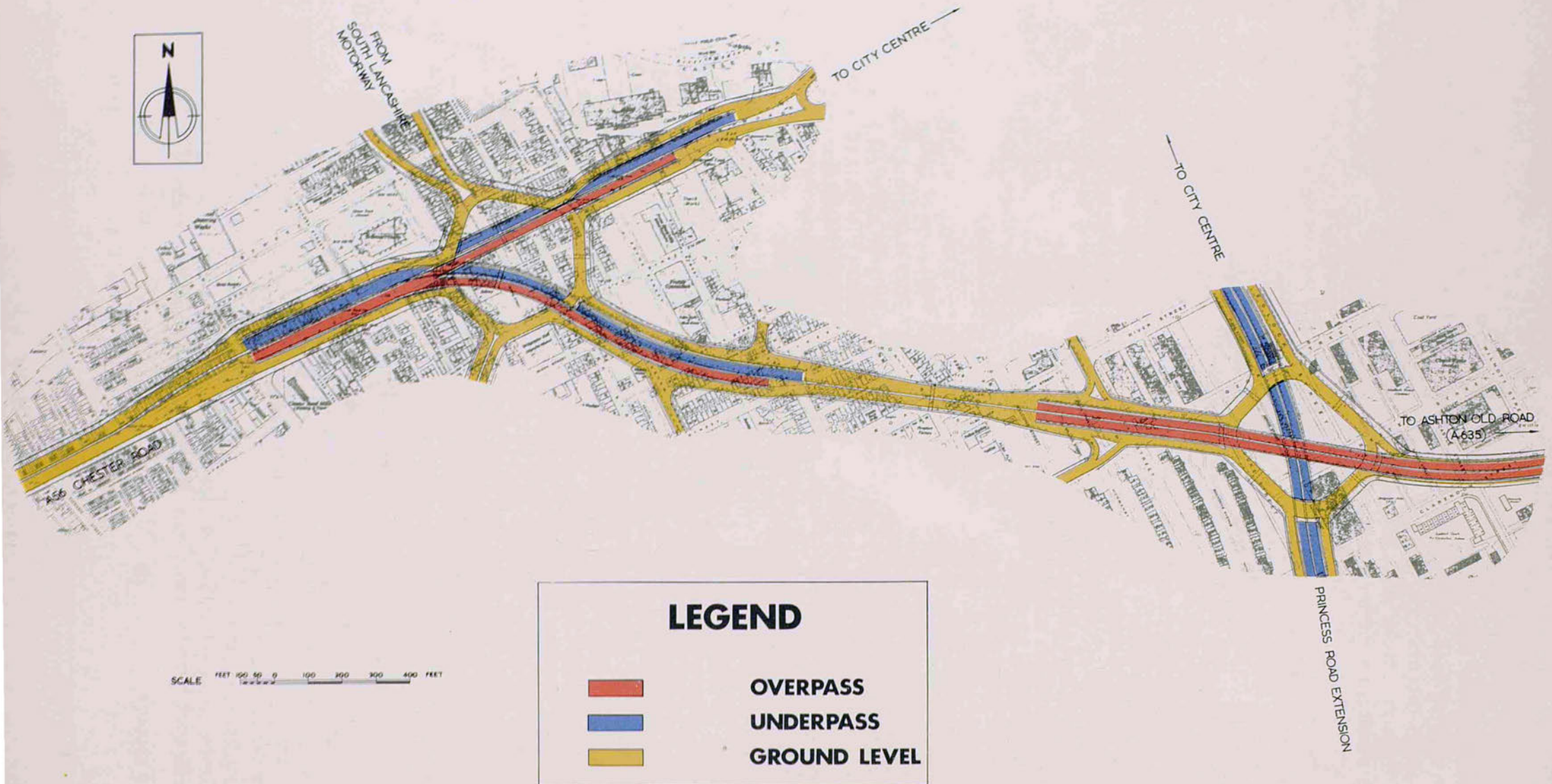


DIAGRAM 22

MANCHESTER (Population 661,000)

The highway proposals up to the Inner Ring Road have been described in the paragraphs describing the main network of the Highway Plan, except a proposed diversion of Middleton Road and Cheetham Hill Road and a widening of Arlington Street and Woodlands Street (641) to by-pass the Cheetham Hill shopping centre. This proposal is not provided for in the estimated cost of the highway proposals, as it is unlikely that it will be carried out until the complete reconstruction of the shopping centre takes place. The line of the diversion and widening is shown in broken red and blue near the top of Plate 10, page 52. [195]

Below, on the same plate, a section of the Intermediate Ring Road (617 and 621) is also shown, and below this again the entire Inner Ring Road (207). Commencing from the City boundary at Strangeways, the latter road follows the line included in the Development Plan up to the junction with Cheetham Hill Road. The volume of traffic which it is now estimated would use the road is such that from this point the line and the design of the road onwards to Pin Mill Brow should be further investigated. At this stage it is considered that the road would have to overpass the Cheetham Hill viaduct, probably underpass Rochdale Road, and also be realigned to the north-east of Miller Street, Swan Street and the greater part of Great Ancoats Street. From the railway viaduct at Pin Mill Brow, the proposal follows the line provided in the Development Plan to the junction with the proposed Princess Parkway Motorway. The line would then continue to the Stretford boundary and then follow the boundary inside Stretford, re-entering Manchester for a short length where it would cross over the Cornbrook Wharf of the Pomona Docks and the Bridgewater Canal into Salford. [196]

It is proposed that this road should be designed as an urban motorway which would accommodate traffic at a reasonable speed and without interruption, so that it might prove more attractive than using the more direct routes across the regional centre. [197]

Link Road 17/7 (603) is shown passing to the south of the city centre. Although it would connect with the South Lancashire Motorway (206) on the west and with Ashton Old Road (635) on the east, its prime purpose will be to enable traffic to and from the south to transfer sideways from the nearest road out of the city centre to the required southern radial road and vice versa. When the cross-traffic using 17/7 grows to proportions which interfere with this movement,

the construction of the southern arc of the Inner Ring Road should then be undertaken. Diagram 22, opposite, shows details of the intersections proposed on 17/7 at Chester Road and the extension of the Princess Parkway Motorway beyond its junction with the Inner Ring Road. [198]

The innermost ring is the City Centre Road (615 and 648). This follows the proposal contained in the Development Plan, subject however to certain changes on the section immediately to the south of Central Station. [199]

It has become evident in considering the comprehensive redevelopment of the city centre that the provision of grade separated junctions on the City Centre Road would create a number of engineering problems and sometimes have a serious effect on the urban environment. It is therefore desirable that the overpasses at major junctions should be limited as far as possible. [200]

Diagram 23, page 46, illustrates the estimated volume of future traffic which would use the road system in the regional centre, in the first case where traffic could proceed at the same speed on the Inner Ring Road, the radial roads within this road, and the City Centre Road, and in the second case where traffic could proceed on the Inner Ring Road at a speed 10 miles an hour greater than on the radial roads and the City Centre Road. [201]

It will be seen that on the basis of equal speed, traffic naturally would take the shortest route, which would result in some sections of the City Centre Road requiring four traffic lanes in each direction and complete grade separation at the radial road junctions. Such a flow of traffic through the City Centre Road could not be contemplated, and consequently if this road is to serve its proper purpose—which is mainly that of circulating traffic requiring to get into the area it encloses until the most convenient point of entrance is reached—the road system within the Inner Ring Road must be designed so that through traffic is discouraged. [202]

The City Centre Road is proposed as an alternative to the widening and improvement of the existing road system within the centre, which would otherwise be necessary. It will enable traffic movements on these roads to be minimised as far as possible. It is essential to the future of the centre that traffic should be controlled in this way in order that parts of the centre, including the main shopping areas and the Civic Area, can in due time become pedestrian precincts. These in turn should be linked by an upper walkway system some twenty feet above ground level. [203]

ULTIMATE DAILY TRAFFIC FLOW PATTERNS IN THE CENTRAL AREA

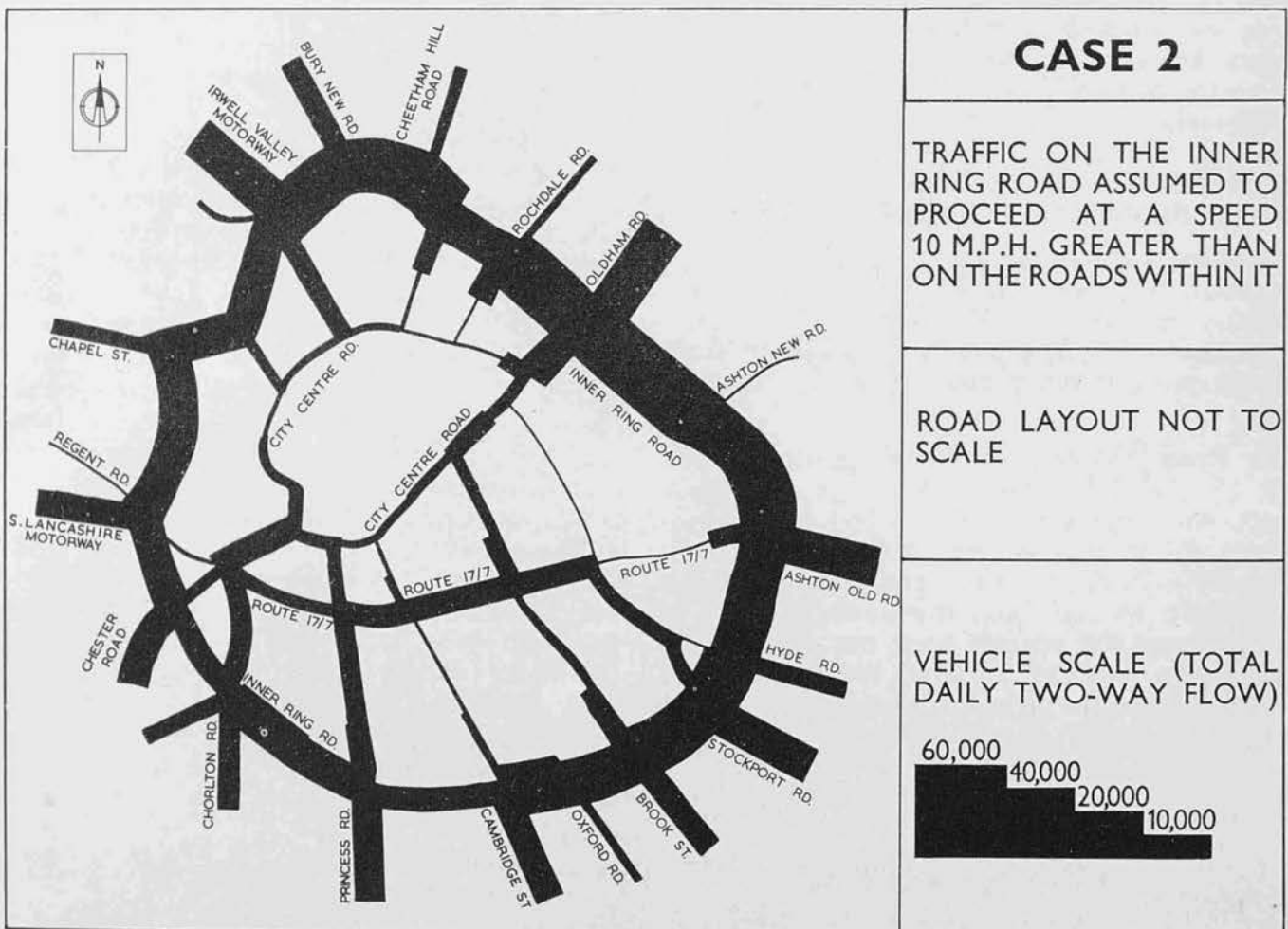
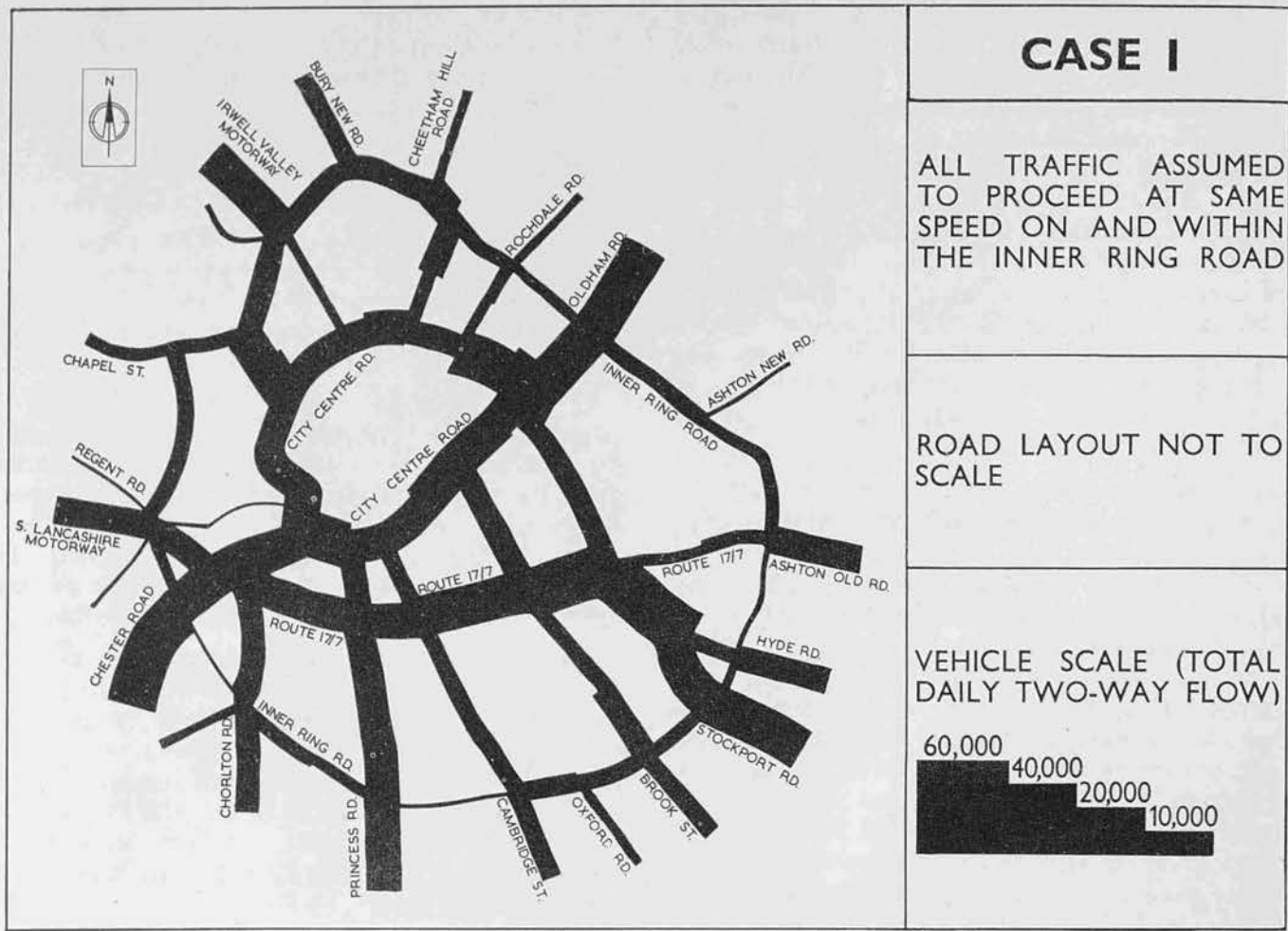


DIAGRAM 23

It is estimated that 144,000 people come into the city centre to work each day and that of these only nine per cent travel by motor car. It is thus evident that potentially the number of people who would travel to and from work by motor car, if the highways were made available, could be 11 times the number doing so today. Obviously, it would be quite impracticable to provide the highways required, and indeed it has been calculated that the present highway system within the City Centre Road could only accommodate two and a half times the present number of

commuter vehicles, when through traffic has been eliminated. [204

It is of interest to find that if the city centre were rebuilt in comprehensive redevelopment areas (fitted to the principal roads and avoiding those buildings and structures which should be retained) with a single level of basement car park through each area, the peak hour capacity of the street system would not be sufficient to accommodate more commuter vehicles than these car parks could accommodate. [205

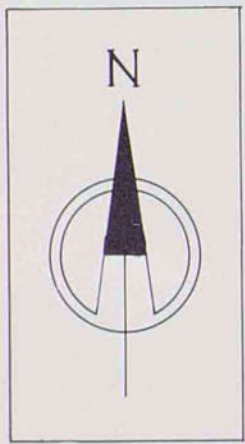
The estimated total cost of the proposed works within the City amounts to £83,407,000. [206

Plate 7

Adequate off-street parking facilities should be made available on the periphery of the central areas. The illustration shows the municipal underground car park at Market Place, Manchester.



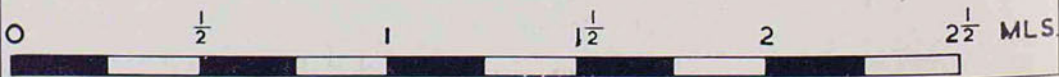
OLDHAM ROAD PROPOSALS



LEGEND

- PROPOSED MAJOR ROADS
- EXISTING ROADS TO BE WIDENED AND IMPROVED.
- COUNTY BOROUGH BOUNDARY

SCALE



OLDHAM (Population 115,000)

Oldham is situated on the foothills of the Pennines and its levels rise approximately from 300 feet to over 1,000 feet above sea level in the south-west and north-east respectively. [207]

The town lies on the main traffic route linking the West Riding of Yorkshire with the Conurbation, and two main roads traversing the town centre and converging at Rhodes Bank carry the bulk of this traffic. The main north/south road, linking Rochdale and the north with Ashton-under-Lyne, Stockport and the south, passes through the western portion of the town centre, intersecting the two east/west roads. The conditions referred to in paragraphs 171 to 176 are accentuated in the centre of Oldham; the foregoing main shopping and business streets are greatly overloaded with through traffic. [208]

Consequently, the future road proposals shown in Plate 8, opposite, provide for the construction of an internal by-pass, which would alleviate town centre congestion. The southern section (701), extending from Bottom o'th'Moor to Manchester Street, would carry all the east/west through traffic. The northern section (707), from Manchester Street to Chadderton Road and Rochdale Road, would cater for north/south traffic. [209]

Convenient and easy access to the Lancashire/Yorkshire Motorway is as vital to Oldham today, if it is to attract and retain industry, as was access to the railway when rail travel was first developed. It is essential, therefore, that Shaw Road be widened and diverted (705) to provide a main traffic route to the Motorway (132) at Milnrow. Bottom o'th'Moor will also require widening (702) concurrently with the first section of the by-pass. [210]

The proposed widening of Chadderton Road and Burnley Lane (205) would link the northern extension of the internal by-pass with the proposed Broadway Extension, and so form a more westerly connection with the Lancashire/Yorkshire Motorway (132). This route would ease the congestion

which now occurs on the main Oldham/Rochdale road and provide access to the north. [211]

Manchester Street and Manchester Road are both shown to be widened (703 and 710) and the latter realigned to connect the internal by-pass with the Outer Ring Road at Hollinwood. The Ring Road would proceed to Whitefield on the line of Bower Lane, and form an essential link between Oldham and the west. [212]

Other road proposals provide for the widening of Middleton Road (711) and Rochdale Road (709), from the internal by-pass to the west and north respectively. To the east, Huddersfield Road (704) and Ripponden Road (716) would be widened, as would Ashton Road (708) southward from the by-pass to the Borough boundary. [213]

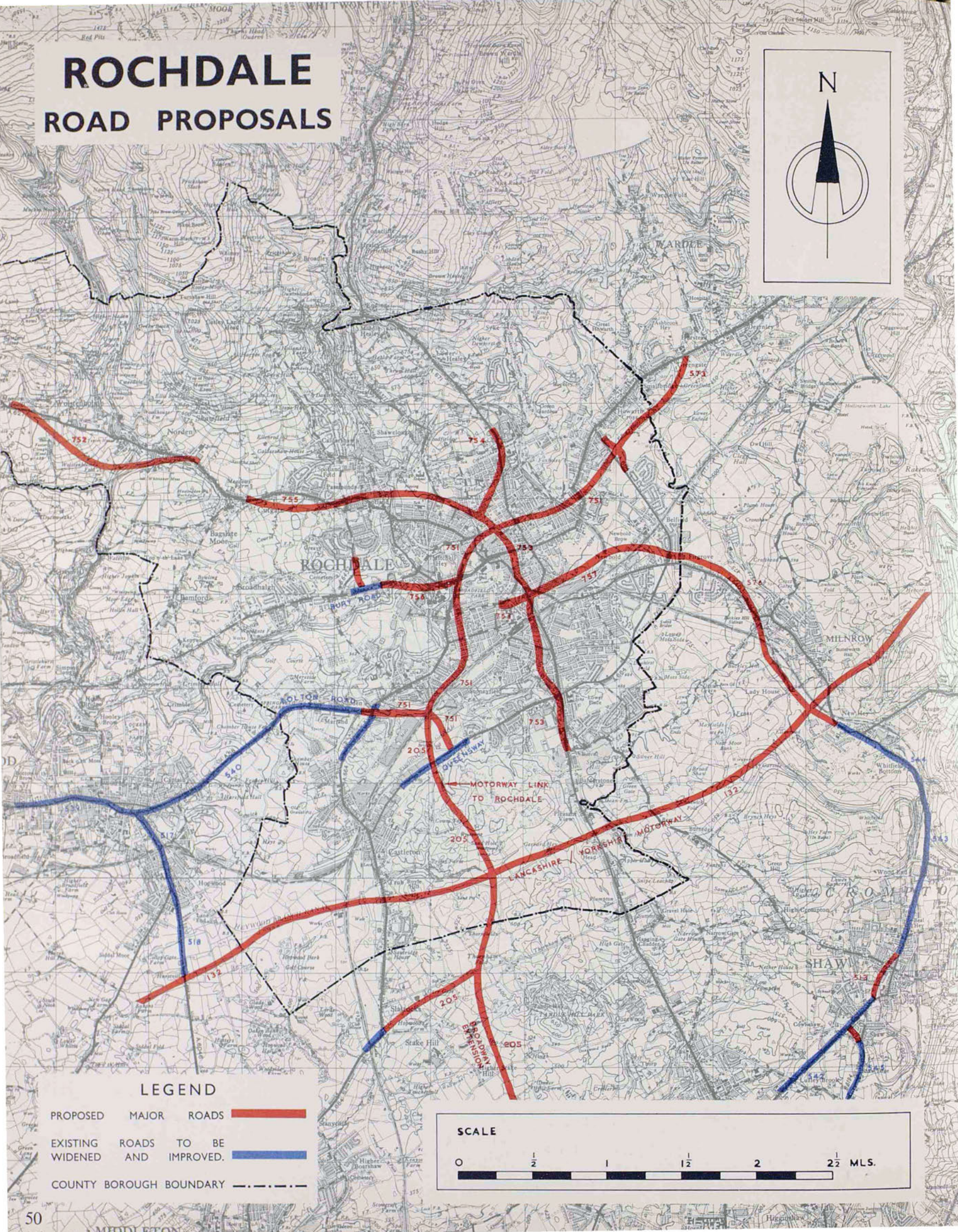
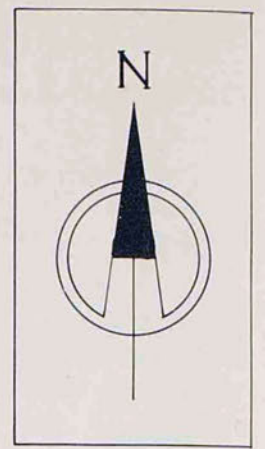
A substantial volume of traffic enters the Mumps area of Oldham from Ashton-under-Lyne via Lees New Road, and in consequence a widening and realignment of Glodwick Road (712) is proposed. The improvement and diversion of Hollins Road (713) would also be necessary at a later date. Barker Street and a portion of Chadderton Road (714), linking the proposed by-pass and Henshaw Street, would be improved so as to form part of a future route serving the proposed redevelopment area north of the town centre. [214]

Within the town centre, two adjoining areas sited between High Street and Union Street have been designated for comprehensive redevelopment. It is expected that this redevelopment will form a pedestrian shopping precinct, with the provision of adequate service roads to facilitate the delivery and collection of goods. In order to ensure free circulation of vehicular traffic within the central area, it is essential that improvements should be carried out at all the main road intersections and that certain portions of these roads, including King Street, St. Domingo Street (706), Manchester Street (715), High Street and Yorkshire Street, should be widened. [215]

The estimated total cost of these works within the Borough is £9,788,000. [216]

ROCHDALE

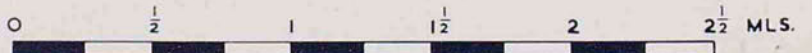
ROAD PROPOSALS



LEGEND

- PROPOSED MAJOR ROADS —
- EXISTING ROADS TO BE WIDENED AND IMPROVED. —
- COUNTY BOROUGH BOUNDARY - - - -

SCALE



ROCHDALE (Population 86,000)

The existing road pattern generally consists of a series of radial roads, which climb steeply from the town centre and then follow undulating or rising gradients towards the Borough boundary. They are mainly fronted with development throughout the whole of their lengths. Therefore, wherever a new route would provide better alignment or improved gradients, or would involve the demolition of less valuable property, this has been preferred to widening the existing road. [217]

Plate 9, opposite, shows the highway proposals for the town and the extent to which these augment the existing road system. It will be seen that the Lancashire/Yorkshire Motorway (132) would pass through the southern part of the Borough, and it is proposed that the new road system should connect with the motorway at two points. The more westerly connection would be formed by a new road (751 and 205) from the town centre, following and then crossing the Manchester/Rochdale railway and the Rochdale Canal, and joining the motorway east of Castleton. The new road (205) would continue southwards out of the Borough to Oldham, and would have connections to Rochdale Road in Middleton and to Broadway in Chadderton. This proposal would provide a fast route between Rochdale and Oldham, and leave both Manchester Road and Oldham Road available for local traffic. [218]

The more easterly connection to the motorway would be provided by another new road (757) from the town centre, located north of the Chichester Street railway sidings and crossing the Borough boundary to the north of Milnrow Road. The road (576) would then continue outside the Borough, cross Rochdale Road at about its junction with Bridge Street, and join the motorway immediately west of the Rochdale/Oldham railway line in Milnrow. From this point it would continue mainly as a widening of the Milnrow/Shaw road (544 and 543) and so provide another connection between Oldham and Rochdale. [219]

The other extensive radial road proposal comprises a new road (752 and 755) in substitution for Edenfield Road, only two comparatively short lengths of the existing road being retained. This road would continue (753) north of the town centre to provide a direct link with Oldham Road, where again a new road is proposed in

substitution for the existing road from the town centre as far as Broad Lane. [220]

It is also proposed that the new road (751) providing the western connection to the Lancashire/Yorkshire Motorway (see paragraph 132) should be continued (751 and 573) north of the town centre towards Littleborough as a replacement of the existing Halifax Road. Thus the town centre would be enveloped on three sides by new roads and on the fourth by the upper part of Drake Street. [221]

These roads would enable through traffic to by-pass the town centre. On the removal of this traffic from the centre and from the shopping areas, pedestrians would be able to move more freely and with greater safety, although the construction of a bus station having direct access to the new road system would further improve conditions. [222]

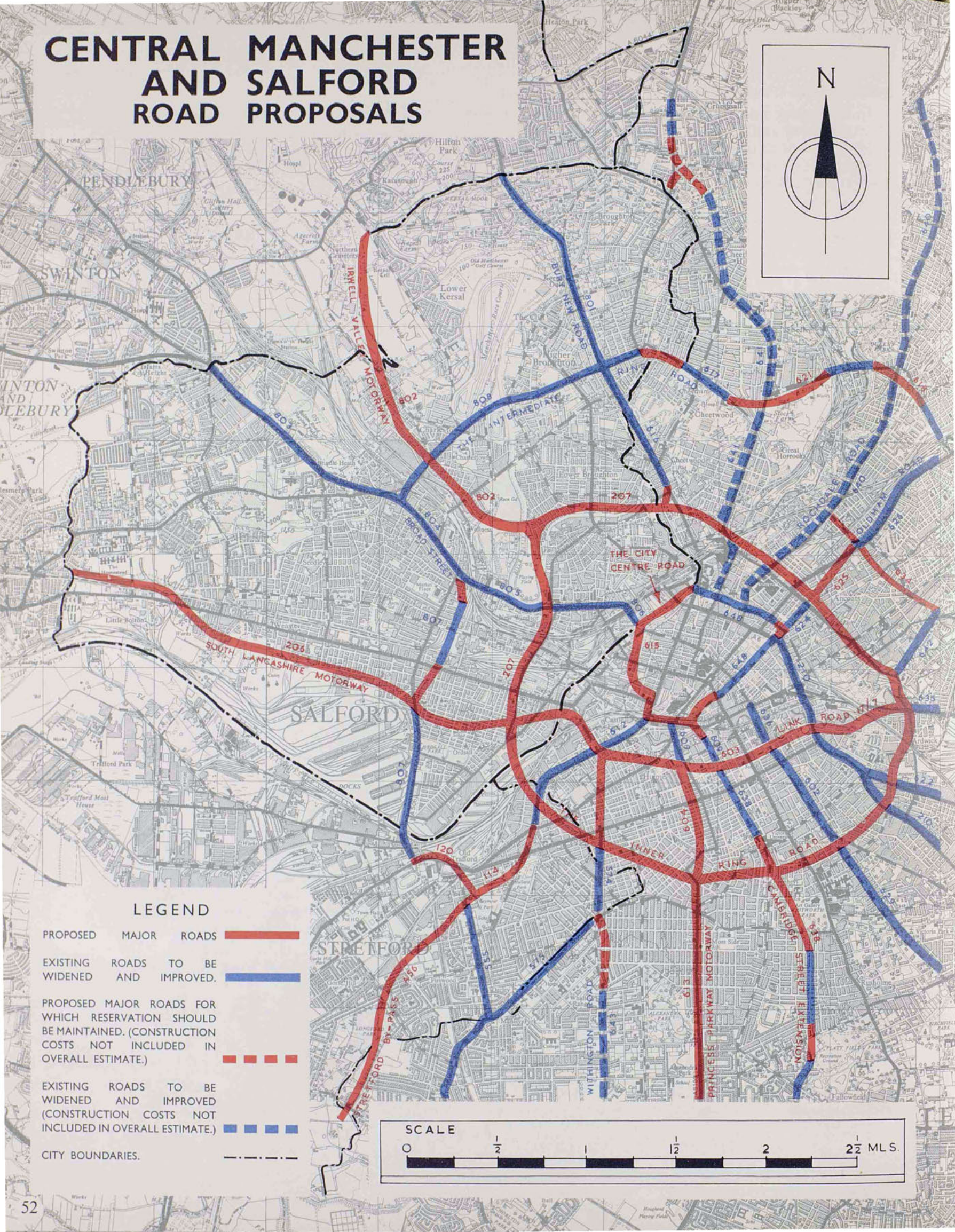
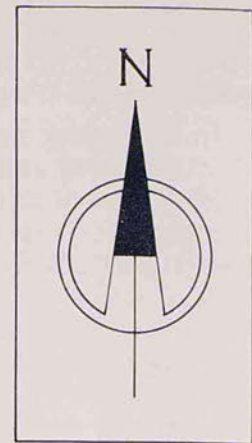
The other new road proposals provide for the continuation of Bolton Road (751) from its junction with Manchester Road to Queensway, a new road (756) in continuation of the Esplanade to Bury Road, a diversion (756) of Sandy Lane north of Bury Road, and a diversion (754) of Whitworth Road to connect with the realignment of Edenfield Road. The proposals also provide for the widening of part of Bury Road (756) and of sections of Manchester Road and Queensway (751). [223]

The road proposals described above are major departures from those in the Development Plan, which was drawn up in 1951 and based on road proposals adopted in 1947. Then, the only new roads were the Lancashire/Yorkshire Motorway, short lengths of the Inner Relief Road and the Castleton By-pass. All other classified roads were to be widened. [224]

The information obtained from the main survey census points in and adjoining the Borough was analysed and the results indicated that further information was required to give a more complete picture of the traffic movements. An additional traffic survey, supplementing the main survey, has therefore been carried out, and the subsequent analysis of the whole of the information obtained has determined the proposed new road pattern. [225]

The estimated total cost of these works within the Borough is £9,100,000. [226]

CENTRAL MANCHESTER AND SALFORD ROAD PROPOSALS



LEGEND

PROPOSED MAJOR ROADS —

EXISTING ROADS TO BE WIDENED AND IMPROVED. —

PROPOSED MAJOR ROADS FOR WHICH RESERVATION SHOULD BE MAINTAINED. (CONSTRUCTION COSTS NOT INCLUDED IN OVERALL ESTIMATE.) - - -

EXISTING ROADS TO BE WIDENED AND IMPROVED (CONSTRUCTION COSTS NOT INCLUDED IN OVERALL ESTIMATE.) - - -

CITY BOUNDARIES. - - -

SCALE

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SALFORD (Population 155,000)

The traffic problem in the City of Salford may be divided into three elements, (i) long distance vehicles which require to pass through the City, (ii) long distance vehicles which are bound for Salford itself, including the Docks and the industrial areas, and (iii) local traffic. [227]

It is proposed to deal with the problem in the following manner. Long distance vehicles would use the proposed motorways which would virtually by-pass the City either at a high or low level, while long distance traffic bound for Salford would use these and join the local road system by means of grade separated junctions. Local traffic would use the improved radial routes and circulate freely by means of the Intermediate Ring Road. [228]

Salford is traversed by three important radial routes, these being Eccles New Road/Regent Road from the west, Bolton Road/Broad Street/Crescent/Chapel Street from the north-west, and Bury New Road from the north. The central area conditions referred to in paragraphs 171 to 176 generally apply. [229]

It is clear from the traffic investigations that these radial routes will not be capable of carrying the enormous volumes of future traffic, and that destined for the Salford and Manchester area, together with through traffic, and therefore new facilities will be required. [230]

Plate 10, opposite, shows the highway proposals for the City. (Those for the central area of Manchester are also included so that the proposed Inner Ring Road can be seen as a complete entity.) [231]

As already mentioned earlier in this Chapter, two motorways are proposed to carry long distance traffic bound for Salford, as well as through traffic. [232]

The South Lancashire Motorway (206) would enter the City from the west, cross the boundary south of Hope Hospital, pass over Eccles New Road between Stott Lane and Weaste Road and proceed in an easterly direction, skirting the north side of the Docks. It would meet the Intermediate Ring Road (807) at Trafford Road and continue to join the Inner Ring Road (207) at Oldfield Road. From this point, a new road would connect with Water Street and Dawson Street, Manchester, and thence join Link Road 17/7 at its junction with Chester Road. With the provision of this new road it should not be necessary to widen Eccles New Road/Regent Road, which would revert to a local road. [233]

The Irwell Valley Motorway (802) would approach the City from the north-west, following

the line of the River Irwell and continuing between Whit Lane and Orchard Street through proposed clearance areas to a junction with the Intermediate Ring Road (808) at Broughton Road. The route would then continue to the junction with the Inner Ring Road, north of the Crescent Playing Fields. This motorway would greatly relieve Bury New Road and Bolton Road/Broad Street/Crescent. [234]

The radial routes Bolton Road (803), Broad Street (804), Crescent/Chapel Street (805) and Bury New Road (801) would, however, still require to be widened, and pedestrian segregation from traffic provided by means of subways or over-bridges wherever possible. [235]

The Inner Ring Road (207), designed to urban motorway standard, would serve to distribute radial traffic wishing to enter Salford and Manchester. At high level the road would cross the City boundary at the Cornbrook Wharf of the Pomona Docks and continue in a northerly direction, following the line of Oldfield Road to a grade separated junction with Chapel Street. From here, the road would continue in a northerly direction to cross the River Irwell and follow the line of the River eastwards to the City boundary near Strangeways. [236]

The Intermediate Ring Road would provide for local circumferential traffic, and substantially follow the line envisaged in the Development Plan. The proposal comprises the widening of Trafford Road, Windsor Street, Albion Street (807), part of Broad Street (804), Broughton Road, Cromwell Road and Great Cheetham Street (808), and a diversion into Elizabeth Street (617) in Manchester. [237]

The proposed alignments of the new roads have been chosen to minimise their impact on the general planning of the City. For example, roads of this nature if badly sited could sever the City in the same way that the railways did in the 19th century, but as far as possible the new roads would follow features, such as a railway line or a river, which already form barriers to cross communications. In other cases the new roads would be sited along the boundary between two use zones, e.g. between an industrial area and a residential area. In only one case (in the Ordsall Park/Regent Road area) would a new road sever a residential area, and here the effect of the road would be minimised by building much of it in a cutting so that it could be easily bridged by local roads and footpaths. [238]

Once the pattern of main roads has been settled, one of the main planning aims should be to canalise as much traffic as possible on to the

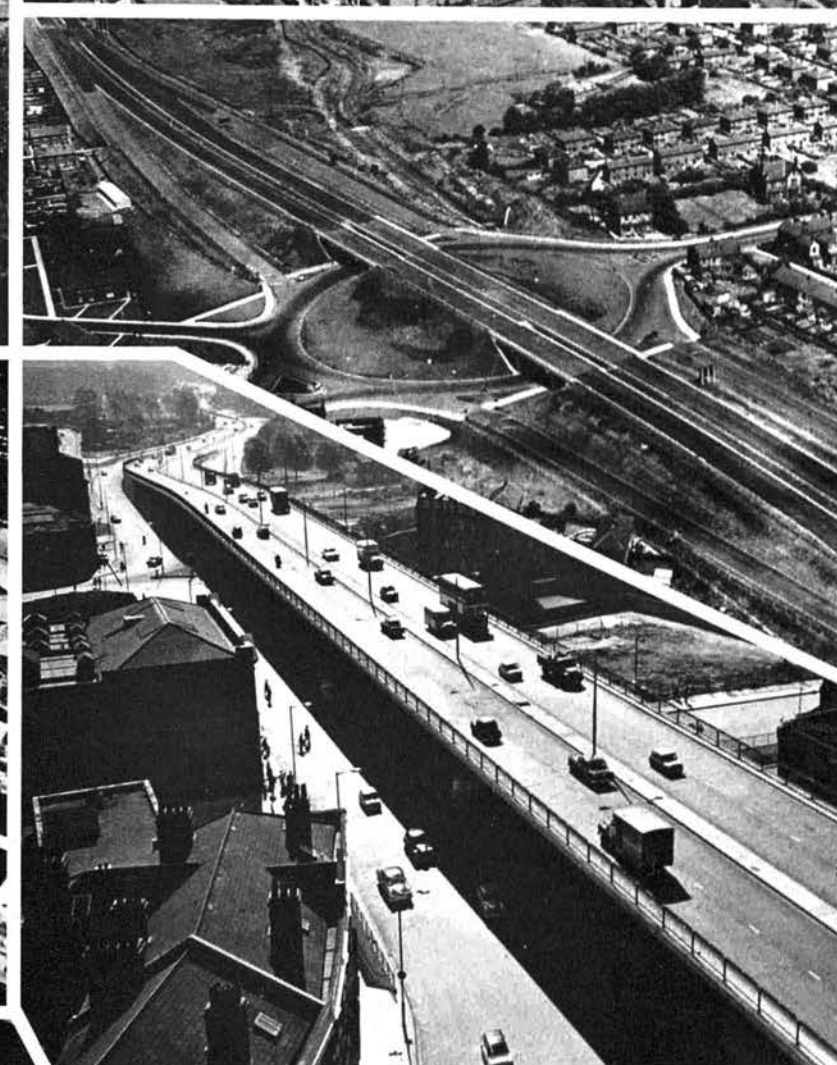
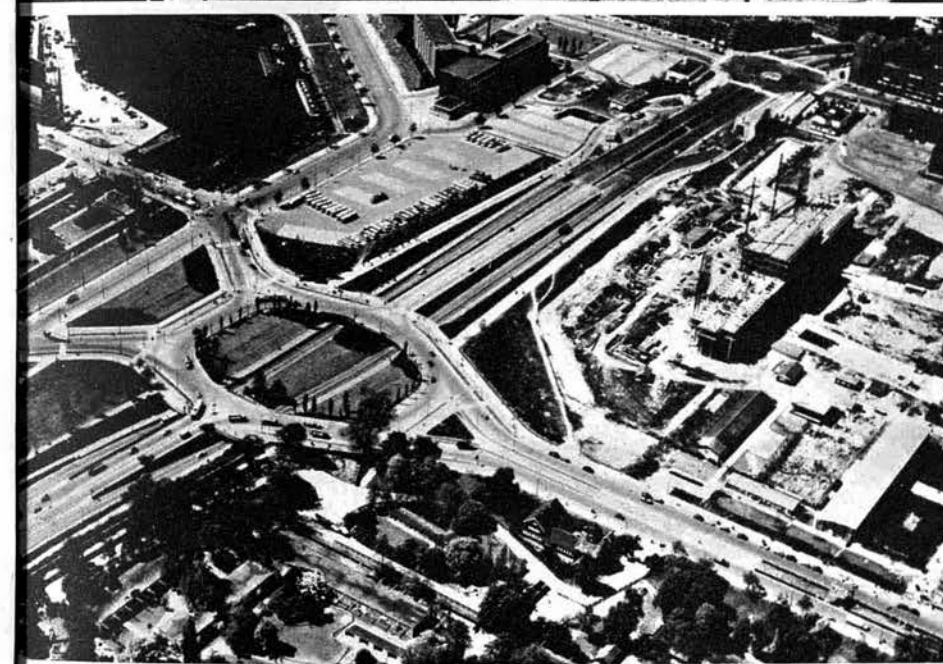
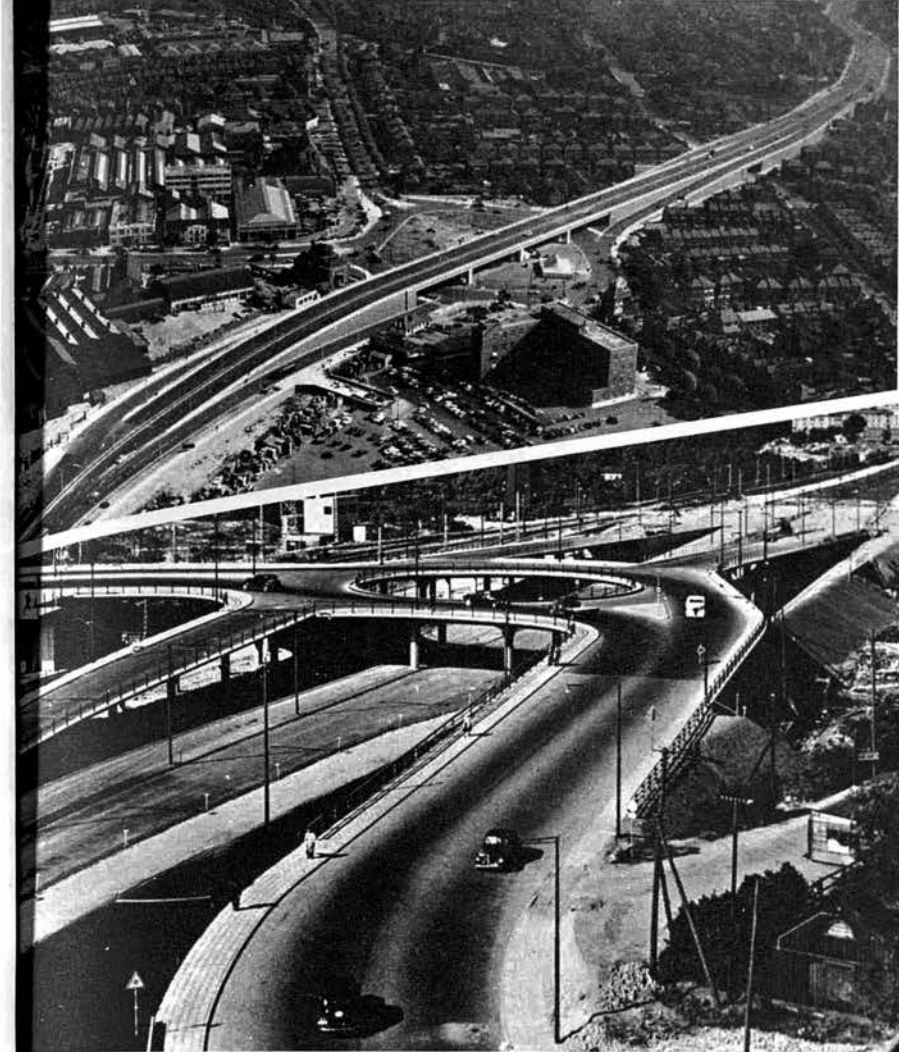
main road network and then to design the intervening areas in such a way as to discourage the penetration of those areas by traffic which has no business therein. This restriction of through traffic on to roads specially designed for the purpose and away from residential and shopping areas is an essential part of urban renewal. [239]

A number of shopping precincts, where shoppers will not conflict with traffic, will be a prominent feature in the redevelopment of the City, one of these being part of the Ellor Street Redevelop-

ment Scheme. This type of development, with its own parking facilities, will alleviate the parking problem and contribute greatly to the amenity of the area. [240]

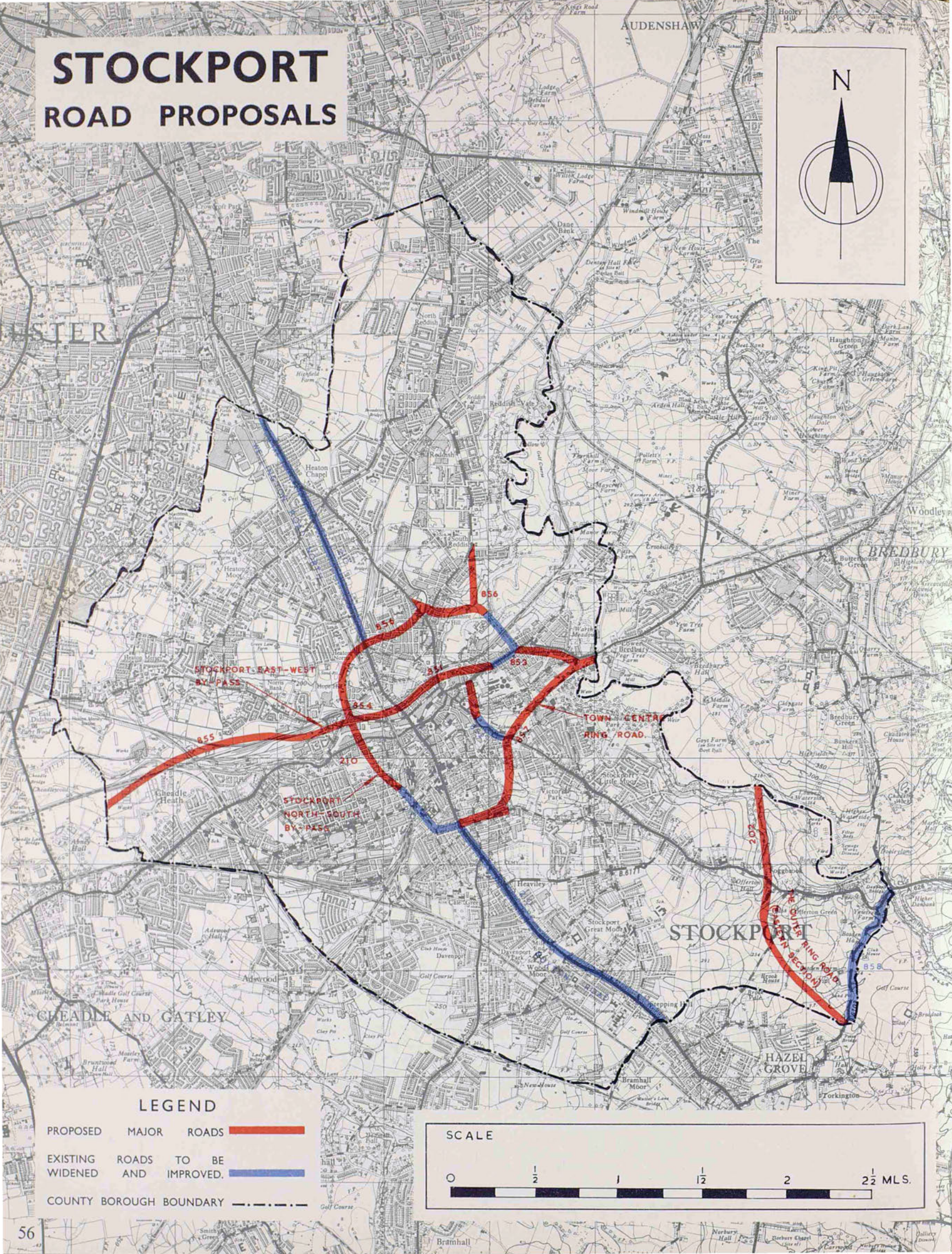
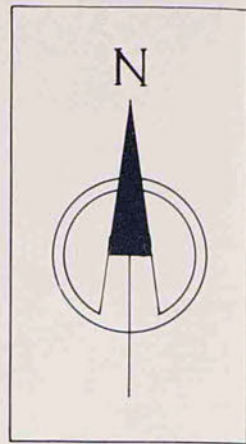
The Highway Plan proposals, integrated with the future planning of the City, would result in a greatly improved road system, and Salford should develop and progress as an attractive urban unit. [241]

The estimated total cost of the proposed works within the city amounts to £28,237,000. [242]





STOCKPORT


ROAD PROPOSALS



LEGEND

PROPOSED MAJOR ROADS 

EXISTING ROADS TO BE WIDENED AND IMPROVED. 

COUNTY BOROUGH BOUNDARY 

SCALE



STOCKPORT (Population 142,000)

Stockport extends over an irregular and undulating area and is contiguous with the urban development of Manchester, Denton, Hazel Grove and Bramhall, and Cheadle. Six railway routes pass through the town, three of which cross the central area, where a large amount of land is occupied by sidings and other railway property. [243]

The River Tame flows into the town from the north-east and the River Goyt from the south-east, and these meet near the town centre to form the River Mersey, which then flows in a westerly direction through the central area. [244]

Stockport has developed round the old crossings of the River Mersey, with the result that all the main traffic routes converge on the town centre. The east-west route (A.560) comes from Cheadle and the west, passes under Wellington Road South (A.6) at Mersey Square, and along Merseyway into Warren Street and Great Portwood Street, thus dividing the central shopping area. On the north/south axis, Wellington Road, North and South, and Buxton Road (A.6), serve the commuters from the residential areas to the south, and this route also passes through the centre of the town. Another traffic route, from the regional centre to Marple, (A.626), passes through the market area; this section of the route being, in fact, closed on the two market days each week. These conditions add to the traffic problems which arise from the lack of suitable cross-town facilities and the limited number of river crossings. [245]

Mersey Square, the hub of the traffic routes, has been used for a number of years as a central bus terminus, and therefore high frequency local and express bus services cross and re-cross two of these routes, causing congestion and danger at most times of the day and particularly at peak hours. [246]

There are several well-defined shopping centres, all of which front on to major traffic routes, while in the central area the conditions described in paragraphs 171 to 176 are especially evident. [247]

A recent survey has shown that about 1,000 cars park in the central shopping area, 215 of these being in off-street car parks. It is estimated that there should be off-street facilities for at least 2,500 cars. Part of this requirement will be met in the Merseyway Redevelopment Scheme, and the remainder provided ultimately on the fringe of the central shopping area. [248]

Plate 12, opposite, shows the road proposals for the town. A new radial road from the west is proposed, to carry traffic from the Trafford Park Industrial Estate and beyond, and to afford access to Stockport from the new Birmingham/Preston

Motorway (M.6). This road—the Stockport East/West By-pass—would largely replace the existing traffic route Stockport Road and Brinksway—which would not be able to accommodate the ultimate traffic now expected. Approaching from the west, the By-pass would follow the valley of the River Mersey (855), then pass north of the central area (854 and 851), join Great Portwood Street (A.560) near Tame Street, and continue along Great Portwood Street, Carrington Road and Newbridge Lane (853) (all to be improved) to the Borough boundary. A link road (108) is proposed from the new road to connect to Stockport Road at the Cheadle boundary. [249]

In the list of schemes given on page 89, it will be seen that Stage I of the Stockport East/West By-pass has been omitted. This is because a formal application has already been submitted to the Ministry for this section of the work, which comprises the construction of a short length of the By-pass to divert through traffic from the central shopping area. This will be a temporary measure only, since it will pass the traffic into a highway system ultimately intended solely for local traffic. The success of the redevelopment of the central area of the town will depend upon the completion of Stage II (851) of the By-pass within the next five years. [250]

The main north/south route through the town, comprising Wellington Road North, Wellington Road South and Buxton Road, would be extensively improved (210) except on the section passing through the central area between Belmont Bridge and Longshut Lane West, where it is proposed that a by-pass (210) be provided to the west of the town centre. This central section, the Stockport North/South By-pass, would be provided by the construction of a new road and an improvement of part of King Street West, Shaw Heath and Longshut Lane West, all of which would then form the western section of the proposed Town Centre Ring Road. The possibility of providing a diversion of the southern section of the main north/south route along Buxton Road and part of Wellington Road South, rather than a widening of the existing road, should be investigated in conjunction with the adjoining Highway Authority. [251]

The northern section of the Town Centre Ring Road would be provided by the construction of a new road, between Wellington Road North and Tame Street (856), and the widening of Tame Street (856). On the easterly side of the town the Ring Road would be continued by a section of the East/West By-pass (853), and by the provision from this By-pass of new or improved lengths of road along New Zealand Road to connect to Wellington

Road South (857), thus catering for the circulation of local and district traffic. [252]

Other proposals provide for the construction of a new road from Andrew Square to Churchgate (852), a widening of Churchgate and Spring Gardens (852), and a new link road southwards from Reddish Road to connect with the Town Centre Ring Road (856). Provision would be made via Exchange Street and Swaine Street for traffic entering the proposed central bus station at Daw Bank and also the redeveloped central shopping and commercial areas. [253]

Improvement schemes to other traffic routes would include widenings of Didsbury Road,

Brinnington Road, Hall Street, Marple Road, Offerton Road and Bramhall Lane. It will be seen that the Outer Ring Road (202) passes through the south-east corner of the town. [254]

The road proposals shown on the Plan are additional to those contained in the Development Plan (approved in 1958) except for the section of the Stockport East/West By-pass between King Street West and Great Portwood Street, the new road from Reddish Road to Great Portwood Street, the Outer Ring Road, and the widenings of some of the existing roads. [255]

The estimated total cost of these works within the Borough is £11,257,000. [256]

THE BOROUGH, URBAN AND RURAL AUTHORITIES

The following paragraphs describe briefly the effect the Highway Plan would have on the present

distribution of traffic in the area of each authority and also the proposals therein. [257]

CESHIRE

Altrincham (Population 41,000)

The proposed Altrincham and Sale By-pass (113) would divert the north/south traffic from the town, and similarly the Cheshire East/West Motorway (106), linking with the Princess Parkway Motorway, would remove much of the east/west traffic. Access to the Altrincham and Sale By-pass would be provided by connections from Sinderland Lane (432) and Charcoal Road, Bowdon (412), and to the Princess Parkway Motorway via Hale Road, Hale, (404) and Altrincham Road, Manchester (601 and 632). Traffic movement within the Borough itself would be improved by the proposed construction of a bridge (401) replacing the Altrincham level crossing, and by widenings of Sinderland Lane (432), Park Road (416) and Thorley Lane (415). [258]

Bowdon (Population 4,000)

The main traffic through the District would be diverted on to the Altrincham and Sale By-pass (113) and the Cheshire East/West Motorway (106). A connection to the former is proposed from Charcoal Road (412) and to the latter via Hale Road, Hale (404). Widenings of Charcoal Road, Park Road (412), Langham Road and Southdowns Road (413) are proposed. [259]

Bredbury and Romiley (Population 22,000)

A by-pass (129 and 130) to the north of the Stockport/Sheffield main road for its entire length in the District is proposed. A connection with the existing road system near George Lane (130) is also provided. The Outer Ring Road (202) would pass through the western section of the District. [260]

Bucklow—Part—Parish of Ringway (Population 250)

That part of the Rural District which extends into the Area is referred to in Diagram 1, page 6, as Ringway. The Cheshire East/West Motorway (106) would pass through the Rural District, and a widening of Wilmslow Road with a diversion at Manchester Airport is proposed (404). [261]

Cheadle and Gatley (Population 46,000)

The proposed by-passes—Northenden (204), Sharston (108), Stockport East/West (855)—would remove the east/west through traffic from the existing Altrincham/Stockport main road, while the proposed intersection of the Sharston By-pass with Kingsway (631), providing for traffic

to and from the west and south only, would obviate the conflict which at present arises at the crossing of the existing main roads. [262]

The highway proposals also provide for an extension of the dual carriageways in Kingsway southwards to Wilmslow (402) and for widenings of Stanley Road (421), Gillbent Road (429), Hulme Hall Road (422), Station Road (427), Ravensoak Road (427), Ladybridge Road (428) and Adswold Road (431), including the Hulme Hall Road, Station Road and Adswold Road railway bridges. The remaining proposal is a widening of Styal Road (418). [263]

Dukinfield (Population 17,000)

Due to the tortuous alignment of Crescent Road, Town Lane and Birch Lane in Dukinfield and to the south in Hyde, it is proposed that the less important route along King Street and Victoria Road should be widened (424) and made available for traffic passing between Ashton-under-Lyne and Hyde. [264]

Hale (Population 15,000)

The construction of the Cheshire East/West Motorway (106) would remove much of the traffic from Hale Road (404), but nevertheless a widening is proposed so that it may effectively link the local road system in Altrincham and Bowdon with the Motorway and Wilmslow. It is also proposed that Southdowns Road, Heather Road (413) and Park Road (414) should be widened, thereby completing the continuity of the widening proposals in Altrincham and Bowdon. [265]

Hazel Grove and Bramhall (Population 30,000)

Considerable relief to the existing main road system would be provided by the Outer Ring Road (202), which at this point would pass to the east and south of the District. [266]

Nevertheless, widenings are proposed on the two main roads in Hazel Grove (111 and 128), with a diversion of Buxton Road (126 and 127) incorporating a junction with the Outer Ring Road. Widenings of Torkington Road (423), the Chester Road railway bridge (430), and the main Stockport/Wilmslow road through Bramhall and Woodford are also included. [267]

Hyde (Population 32,000)

It is proposed that the central area should be by-passed on the north side by a new road (105)

extending from the Borough boundary at Denton to Godley Arches. From this point Mottram New Road (103) would be widened to its junction with Stockport Road. Widenings of Dukinfield Road (424) to the north of the new by-pass, of Market Street southwards to its junction with Dowson Road, of Dowson Road (409) to its junction with Stockport Road, and of the Stockport to Yorkshire main road (130 and 131), known through the Borough as Stockport Road/Mottram Old Road/Stockport Road, are also proposed. [268]

Sale (Population 51,000)

The construction of the proposed Altrincham and Sale By-pass (113) would remove the north/south through traffic from the town while much of the through east/west traffic which at present crosses the centre of the town would use the Outer Ring Road when the Sale Eastern By-pass (204) is built. [269]

Connections with the Altrincham and Sale By-pass are proposed at Carrington Lane (410), and with the Sale Eastern By-pass at Old Hall Road (411), so that a new route into Manchester would become available when the Hardy Lane Extension (209) is constructed. The existing road system to these connections would be improved by widenings of Carrington Lane, Harboro' Road

(410), Marsland Road (411), Old Hall Road, and also Glebelands Road (426) and Dane Road (417). [270]

Stalybridge (Population 22,000)

A short diversion of Huddersfield Road (425) immediately south of Mill Brook, together with widenings of the main radial roads Stamford Street (408), Wakefield Road (406) and Mottram Road (407), are proposed. [271]

Wilmslow (Population 21,000)

The Highway proposals provide for a widening of Wilmslow Road and Manchester Road (403), continued by a new road passing to the east of the town shopping centre and connecting at its south end with a proposed by-pass of Alderley Edge. A widening of the main road from Bramhall, Woodford Road/Adlington Road (405), and the construction of a new road (405) from the Prestbury Road junction to the proposed new road east of the shopping centre, are also proposed. These would replace the existing Station Road and Macclesfield Road as a traffic route. Other proposals provide for widenings of Altrincham Road (404), Knutsford Road (420), and Styal Road (419). [272]

The estimated total cost of the proposals within the Cheshire Districts is £37,910,000. [273]

LANCASHIRE

Ashton-under-Lyne (Population 50,000)

The through traffic at present using the principal north/south and east/west routes in Ashton would in future use the Lancashire/Yorkshire Motorway (132) and the Outer Ring Road (202). [274]

The Highway Plan also provides for a widening of Manchester Road (549), from the Audenshaw boundary to the junction with Stockport Road, continuing with a new by-pass to the south of Stamford Street (506), and then a widening of Stamford Street (530) from a gyratory system at the Memorial Gardens to the Cheshire County Boundary. Fly-overs would eventually be required at the junctions of the by-pass with Stockport Road and Cavendish Street (550). A new road (529) on the north-east side of the town centre would connect a widened Wellington Road (554) to the Memorial Gardens gyratory system. [275]

A widening of Oldham Road (551) from the Oldham boundary to Wellington Road, with a direct continuation of Oldham Road as a diversion (535) from the present line, followed by a widening of Cavendish Street into Dukinfield are proposed. Also widenings of Stockport Road (536), from Manchester Road to the Borough boundary, and of Crickets Lane and Mossley Road, from the

Memorial Gardens to Queen's Road (552), and from Mellor Road to Gorse Lane (561). [276]

Audenshaw (Population 12,000)

The proposals provide for widenings of Manchester Road (526 and 548), which would connect with the Outer Ring Road (202), of Guide Lane (510), from the Ashton-under-Lyne boundary to Nelson Street—with a direct continuation (519) of Guide Lane to join Denton Road at the Denton Road Leather Works, and of Audenshaw Road (546) and Stamford Road (556). [277]

Traffic through the District would be reduced by the Outer Ring Road (202) and to a lesser extent by the Lancashire/Yorkshire Motorway (132). [278]

Chadderton (Population 32,000)

The Highway Plan provides for improvements designed to secure greater safety and capacity along Broadway (211) from the Outer Ring Road northwards to its junction with Burnley Lane. The construction of a new road (205) from this junction would continue to the Lancashire/Yorkshire Motorway, and onwards to form the western link from the Motorway into Rochdale. [279]

The new road now proposed would also extend in a south-easterly direction from Broadway and connect to Burnley Lane (205) near the Oldham boundary. Widenings of Middleton Road (564), east of Broadway, and of Grimshaw Lane (522), from Hyde Road to the Middleton boundary, are also proposed. [280]

Crompton (Population 13,000)

It is proposed that the easterly connection from Oldham to the Lancashire/Yorkshire Motorway should be provided by Manchester Road/Milnrow Road (542, 543 and 544) and Oldham Road (545), each of which should be widened, and that Oldham Road should be diverted at Shawside (545). A by-pass of High Street and Milnrow Road would be constructed from the High Street/Church Street junction, by-passing the town centre on the west side and re-joining Milnrow Road north of Rochdale Road (513). [281]

Denton (Population 31,000)

A diversion is proposed to the north of Manchester Road/Hyde Road, between Windmill Lane and the Hyde boundary (112), to form a by-pass which would remove through traffic from the centre of the town. A widening of the section of Manchester Road between the Manchester boundary and Windmill Lane (104) is also proposed, together with a connection to the Outer Ring Road (202) just to the south-west of Denton Reservoirs. The eastern section of the Outer Ring Road would afford considerable relief to Ashton Road/Stockport Road, and the proximity of the Ring Road to the Town would allow good communications for traffic to the north and south. A widening of Stockport Road (568), from Manchester Road southwards to Three Lane Ends, is included for more local use. [282]

Droylsden (Population 25,000)

The main road known as Manchester Road/Ashton Road (528) would be widened to provide dual carriageways. A feature of the proposals for Droylsden is the provision made for north and south movements from the town by means of the Outer Ring Road. These would open up communications which hardly exist at present, with consequent economic benefits to the town. [283]

Eccles (Population 43,000)

Traffic in the town has been reduced by the construction of M.62 (152), which has diverted the north/south through traffic from the centre. The provision of the proposed South Lancashire Motorway (206) would divert the east/west through traffic. A connection to the motorway, from the existing road system north and south of the railway, is proposed at the Salford boundary. To the south of the railway this would give vehicular access to

Regent Street and to a new southern by-pass of the town centre (515), which would join the existing road system at its western end at the junction of Corporation Road and Church Street. In this way both local and long-distance through traffic would be able to avoid the centre—and thereby secure safer conditions therein—while local traffic would secure convenient access to the Motorway. From this junction, widenings of Church Street and Liverpool Road (570) to Green Lane are proposed. [284]

A diversion of Worsley Road from its junction with New Lane (571) is provided, joining a widening of Worsley Road and Barton Road at the Liverpool Road crossing. The widening would then continue southwards to the junction with Ermen Road. A widening of M.62 (524) from two to three lane carriageways is also proposed between its junction with the South Lancashire Motorway and Worsley Courthouse. [285]

Failsworth (Population 20,000)

A diversion (122) is proposed to the north of the present main road, thereby forming a by-pass to the town. Communications into Failsworth, particularly from the south, would be improved by the Outer Ring Road (202) which would have an interchange with the A.62 just north of the District. [286]

Farnworth (Population 27,000)

There are two main traffic routes through the District via Egerton Street and Bolton Road. The Farnworth and Kearsley By-pass (212) with its link (505) to the Manchester/Preston Motorway would provide safe and convenient alternative facilities for these movements. [287]

The new by-pass road would be situated to the east of the town, commencing from Manchester Road in Bolton just north of Moses Gate Station, following the north-east side of the Manchester/Bolton railway line and crossing the railway south of Darley Park and then Bolton Road between its junction with Manchester Road and Stoneclough Road. [288]

Heywood (Population 24,000)

The Lancashire/Yorkshire Motorway (132) would pass to the south of the town and serve as a by-pass for east/west main traffic. The Highway Plan proposals provide for the widening of the Bury to Rochdale main road (539 and 540), and also the main road to Middleton (517 and 518), and for a connection of that road to the motorway. [289]

Kearsley (Population 10,000)

The main route through the District is Bolton Road, from which traffic would be removed

when the Farnworth and Kearsley By-pass (212) and the link to the Manchester/Preston Motorway (109) are available. [290]

Lees (Population 4,000)

A by-pass is proposed to the south of the existing High Street (569). [291]

Little Lever (Population 5,000)

A widening of part of Church Street and a new road (559) from Church Street to Coronation Square, forming a by-pass of Market Street are proposed. [292]

Middleton (Population 57,000)

The Highway Plan shows that Middleton would be bounded by a system of major regional highways with good connections between these and the town centre. [293]

Widenings of the radial roads are proposed, namely, Manchester New Road (563), Manchester Old Road (538), Long Street and Rochdale Road (562), and Oldham Road (547). A widening of Slattocks Railway Bridge on Rochdale Road and the construction of a new road (205) from that point to the proposed Broadway Extension (205) would provide the eastern connection from Middleton to the Lancashire/Yorkshire Motorway (132). Heywood New Road would also be connected to the Motorway. An Inner Ring would be provided, comprising a link road from Manchester Old Road to Manchester New Road (503), an improvement of that part of Oldham Road from Manchester New Road to Corporation Street (509), and then a new link road connecting Oldham Road to Long Street (509). Townley Street would be diverted to run from the junction of the latter link road and Oldham Road to the junction of Kirkway and Townley Street (572). A widening of Grimshaw Lane from Castle Street to the Chadderton boundary is also proposed (522). [294]

Milnrow (Population 8,000)

A diversion of the existing Rochdale to Crompton road between the Rochdale boundary and New Hey would form the eastern connection from the Lancashire/Yorkshire Motorway to Rochdale, and would also by-pass the town (576). South of the Motorway the proposed widening of Shaw Road (544) would improve the connection into Oldham. [295]

Mossley (Population 10,000)

Road improvements to Stockport Road (553), from Lees Road to Quick Road, and to Manchester Road (560), from Lancashire Cottages to Roaches Canal Bridge, are proposed, and also a widening of the Black Rock railway bridge (534). [296]

Prestwich (Population 34,000)

The provision of the Lancashire/Yorkshire Motorway (132), the Bury Easterly By-pass (121), the Irwell Valley Motorway (118 and 802), and the Outer Ring Road (201), would divert a large volume of through traffic from the Borough. However, it is proposed that Bury New Road (123) should be widened to deal with more local traffic. A diversion of Rainsough Brow (537) from Langley Road to Spring Vale, and widenings of Sheepfoot Lane (520) and Bury Old Road (516 and 521), are also proposed. [297]

Radcliffe (Population 27,000)

The major highway proposals in the vicinity of Radcliffe would remove traffic which at present passes through the town. In order to secure the proper redevelopment of the central area and also to cater for the residual traffic, a local by-pass would be provided, from Radcliffe Moor Road (532, 558 and 525), passing south of the Bradley Fold Works, to the junction of Blackburn Street, New Road and Stand Lane. A connection to this by-pass would be formed by the continuation of Ainsworth Road southwards from its junction with Water Street (525). [298]

Widenings of the Bolton/Bury road (527), of New Road and Radcliffe New Road (565), of Ainsworth Road (557), between Water Street and Alpha Street, and of Spring Lane (567), between the Town Hall and Bury Road, are proposed. A diversion of Bury Street (566), between Cross Lane and Dumers Lane, is also included. [299]

Royton (Population 14,000)

Traffic on the main Oldham to Rochdale road would be considerably reduced when the Broadway Extension (205) is constructed. The Highway Plan provides for the widening of Oldham Road (541) south of Broadway, which would improve access to Oldham, and also of Shaw Road (542), Higgsinshaw Lane and Heyside (545). [300]

Stretford (Population 60,000)

The extremely large amount of traffic on Trunk Road A.56 affects all roads in the vicinity and disrupts the life of the town. Furthermore, in addition to the normal traffic difficulties associated with shopping areas and commuter movements, there are particular concentrations at the entrances to Trafford Park. Traffic on A.56 is so great that a motorway by-pass is essential. [301]

A by-pass (114), forming a continuation of the Altrincham and Sale By-pass (113), would pass to the south and to the east of the town. A high level connection is proposed east of Trafford Bar, for traffic to and from the Trafford Park Industrial Estate and also Chester Road. The movement of traffic into and out of the Estate would be facilitated.

tated by the provision of a roundabout at the junction of Trafford Park Road and Trafford Road. A new road (502 and 508) would connect the western part of the Estate with the existing M.62. [302]

Improvements, to deal with the present traffic, are proposed on Chester Road between Talbot Road and Derbyshire Lane (101), at Edge Lane (102), and between Market Street and Barton Road (107). A widening of Edge Lane between King's Road and Chester Road (511), an improvement and diversion of King Street from Chester Road to Barton Road (512), improvements of Barton Road, from Sevenways to M.62 at Lostock Circle (533), Chorlton Road (574), Upper Chorlton Road (575), and Seymour Grove (555), are also included. [303]

Swinton and Pendlebury (Population 40,000)

The Highway Plan provides for the improvement of the East Lancashire Road (110), with a fly-over (117) at the intersection with Manchester Road and Bolton Road. The construction of the Lancashire/Yorkshire (132), Irwell Valley (118) and South Lancashire (206) Motorways would effect a considerable change of traffic movements in the area and relieve the existing roads which at present carry traffic through the District. [304]

Urmston (Population 43,000)

Traffic in this Town is now largely local, as through traffic uses the M.62. However an appreciable volume of tanker traffic from

Carrington still passes through, and in order to divert this traffic the Highway Plan provides for the connection of Carrington Lane to the Altrincham and Sale By-pass. Widenings of Barton Road (514) and Lostock Road (523) from Davyhulme Circle to M.62, and of Carrington Road from the River Mersey to Flixton Station, including the railway bridge (531), are proposed. [305]

Whitefield (Population 14,000)

The construction of the Bury Easterly By-pass (121) would divert through traffic from the town. A widening of Bury New Road (124 and 116) and of Bury Old Road (521), to accommodate Bury/Manchester and local traffic, are proposed. [306]

Worsley (Population 41,000)

Traffic conditions would be considerably improved by the extension of M.62 (504), as part of the Outer Ring Road, and the provision of the Lancashire/Yorkshire (132) and Manchester/Preston (109) Motorways and the Farnworth and Kearsley By-pass (212), which would have the effect of taking traffic off Bolton Road, Memorial Road and Walkden Road, and thereby relieve the existing congestion at the Memorial and at the Walkden Road/East Lancashire Road roundabout. An improvement of the East Lancashire Road (110) is also proposed. [307]

The estimated total cost of the proposals within the Lancashire Districts is £101,606,000. [308]

Table 6
SUMMARY OF ESTIMATED COSTS OF THE MAJOR HIGHWAY PROPOSALS
Based on 1962 construction costs

AUTHORITY	New Routes		Existing Routes					Schemes under £100,000	GRAND TOTAL £
	Provisional Breakdown		Classification						
	Potential Trunk Roads	Potential Classified	Trunk Roads	Class I	Class II	Class III	Unclassified		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Bolton C.B.		4,280,000		8,477,000	890,000		263,000	560,000	14,470,000
Bury C.B.		2,050,000		1,420,000	390,000			365,000	4,225,000
Cheshire C.C.	12,725,000	7,850,000	2,685,000	7,260,000	4,730,000	1,060,000		1,600,000	37,910,000
Lancashire C.C.	25,935,000	27,704,000	10,090,000	27,696,000	3,701,000	750,000		5,730,000	101,606,000
Manchester C.B.		42,787,000		26,754,000	10,758,000	2,050,000		1,058,000	83,407,000
Oldham C.B.		4,801,000		3,728,000	1,120,000			139,000	9,788,000
Rochdale C.B.		5,600,000		3,000,000				500,000	9,100,000
Salford C.B.		21,712,000		6,197,000	128,000			200,000	28,237,000
Stockport C.B.		8,355,000		2,450,000				452,000	11,257,000
Totals £	38,660,000	125,139,000	12,775,000	86,982,000	21,717,000	3,860,000	263,000	10,604,000	300,000,000

ESTIMATED COST OF THE HIGHWAY PROPOSALS

THE TOTAL ESTIMATED COST is £300,000,000. [309]

The Ministry of Transport have intimated that the estimate should not include that part of the Lancashire/Yorkshire Motorway which crosses the Area. Incidentally, this amounts to £14,000,000. [310]

Of the total estimate, £12,775,000 is for the improvement of existing trunk roads, and £38,660,000 for the construction of roads which the Committee consider, in conformity with present practice, might be accepted as extensions of the national trunk roads system. The total trunk road estimate, on this basis, is £51,435,000. [311]

Consideration of the trunk road proposals, and of the acceptance or otherwise of the potential trunk roads as such, would of course be a matter for the Minister of Transport. [312]

The Committee consider that the arbitrary termination of the Minister's responsibility for trunk roads at County Borough boundaries is illogical, and that further addition to the trunk road mileage might appropriately be made by extending these national trunk roads into the County Boroughs, at least to points where the distribution of traffic on to the local road system takes place. [313]

It will of course be appreciated that the Divisional Road Engineer, as a member of the Committee, must be dissociated from the allocation of the estimate to potential trunk roads and from the above observations. [314]

Table 6, opposite, summarises the estimated cost of the Highway Plan proposals into trunk road (on the basis referred to in paragraph 311) and main road classifications. Details of individual schemes are given in Appendix E. [315]

On the present grant basis of 75 per cent for Class I roads, 60 per cent for Class II roads and 50 per cent for Class III roads, the total grant against the estimate of £248,000,000 for classified roads would be about £181,000,000. [316]

On the basis of £2½M or £4M of grant referred to in the Introduction, paragraph 2, page 1, the completion of the Highway Plan would take 72 years or 45 years respectively. This is, of course, on the assumption that in the same time the Minister of Transport would also provide £52M (for the trunk roads and £14M for the Lancashire/Yorkshire Motorway), and the Local Authorities £67M towards the cost of the classified roads. [317]

A programme spread over either of these periods would be completely unrealistic. The adoption of such a time scale would involve acceptance of complete traffic stagnation in large parts of the Area, with the most serious consequences to the economic and daily life of the Region. Further, those schemes which were completed would either be partly effective because of the inadequacy of the connecting main roads, or would attract so much traffic that they would soon become seriously congested, particularly at peak hour periods. [318]

With a continuation of the present upward trend in the standard of living, an increase in the number of private cars must occur, whilst motor vehicles associated with industry—their numbers having increased by over a third in the last five years—will also add to the demands on the highway system. [319]

It would seem unreasonable to suppose that a considerable control of the general use of the motor vehicle could be imposed by legislation. Irrespective of other considerations, the effect of restrictions on the manufacture and export of motor vehicles cannot be disregarded. [320]

Indeed, the speediest possible provision of an adequate road system throughout the country may well be a vital factor in reducing the cost of exported goods and thereby improving the outflow of exports which is so essential to our prosperity. [321]

It may, therefore, be considered that the Highway Plan ought to be completed in a period of 20 years at an overall rate of £15M per year, including a grant allocation of £9.1M per year; that is more than twice the higher of the rates suggested, i.e., £4M. [322]

It is not really within the terms of reference of the Committee to examine the practicability of undertaking such an expenditure. However, it is possible to make some brief references to these matters by referring to the proceedings of the Conference on the Highway Needs of Great Britain held in November, 1957, at the Institution of Civil Engineers. [323]

That Conference had before it a comprehensive selection of Papers concerned with the highway needs as they were then envisaged. Since that time the national expenditure on highways, although it has increased, has not kept pace with the increase in traffic, and conditions have sub-

stantially worsened, particularly in urban areas. Even so the general conclusion then was that an expenditure of £350M per annum should be undertaken in the succeeding period of ten years. [324]

An estimate of £3,500M was suggested as the money required to provide an adequate highway system*. This included £1,000M for urban requirements, and was based on a graded estimated cost per head of population. In the case of towns having a population over 500,000 this amounted to £50 per head for their roads. [325]

The estimate in the case of Manchester now amounts to approximately £80M, or about £120 per head of population. It would not, therefore, seem unreasonable to expect that the estimate of £1,000M then quoted might now be doubled. [326]

Again the provision of new rural motorways was estimated at £350,000 per mile and it would now seem that this figure might also be doubled. [327]

It may be that the other provisions in the estimate would not need to be increased to the same extent, but assuming that the estimate would now be £7,000M, and that this were to be undertaken in a period of 20 years, the annual expenditure would amount to £350M. [328]

As previously mentioned this was the rate of expenditure which the Conference concluded was required over a period of 10 years. Sir Herbert Manzoni, C.B.E., M.I.C.E., City Engineer and

Surveyor of Birmingham, addressed the concluding session of the Conference and summarised the proceedings. In respect to this suggested expenditure, Sir Herbert referred to the fact that the most liberal estimate suggested the cost would be saved in ten years, while the most conservative one suggested 18 years; these estimates ignored the items of human suffering and inconvenience, and also the effects on our exports by reason of the more competitive prices which a modernised highway system might make possible. From then onwards it appeared that an annual saving of £265M, or if non working time were taken into account £700M, would result from the use of the modern highway system. [329]

On the important question of resources of materials, plant and labour, Sir Herbert made the following comment:— [330]

"It is obvious that the resources would be strained in most items, but it is also obvious that they could be adequate and indeed would be adequate if the work had to be done as an emergency job".

These brief comments suggest that the Highway Plan proposals are not unrealistic, and that indeed they would be financially renumerationary. [331]

This is, of course, a technical report and consideration of the Plan as a whole, together with the individual proposals and financial implications, is at this stage a matter for the Highway Authorities concerned and subsequently, if they so decide and subject to any modifications they may make, for the Minister of Transport. [332]

* An assessment of the cost of an adequate highway system by Rowland Nicholas and John Humphrey Harry Wilkes.

TRANSPORT SYSTEM

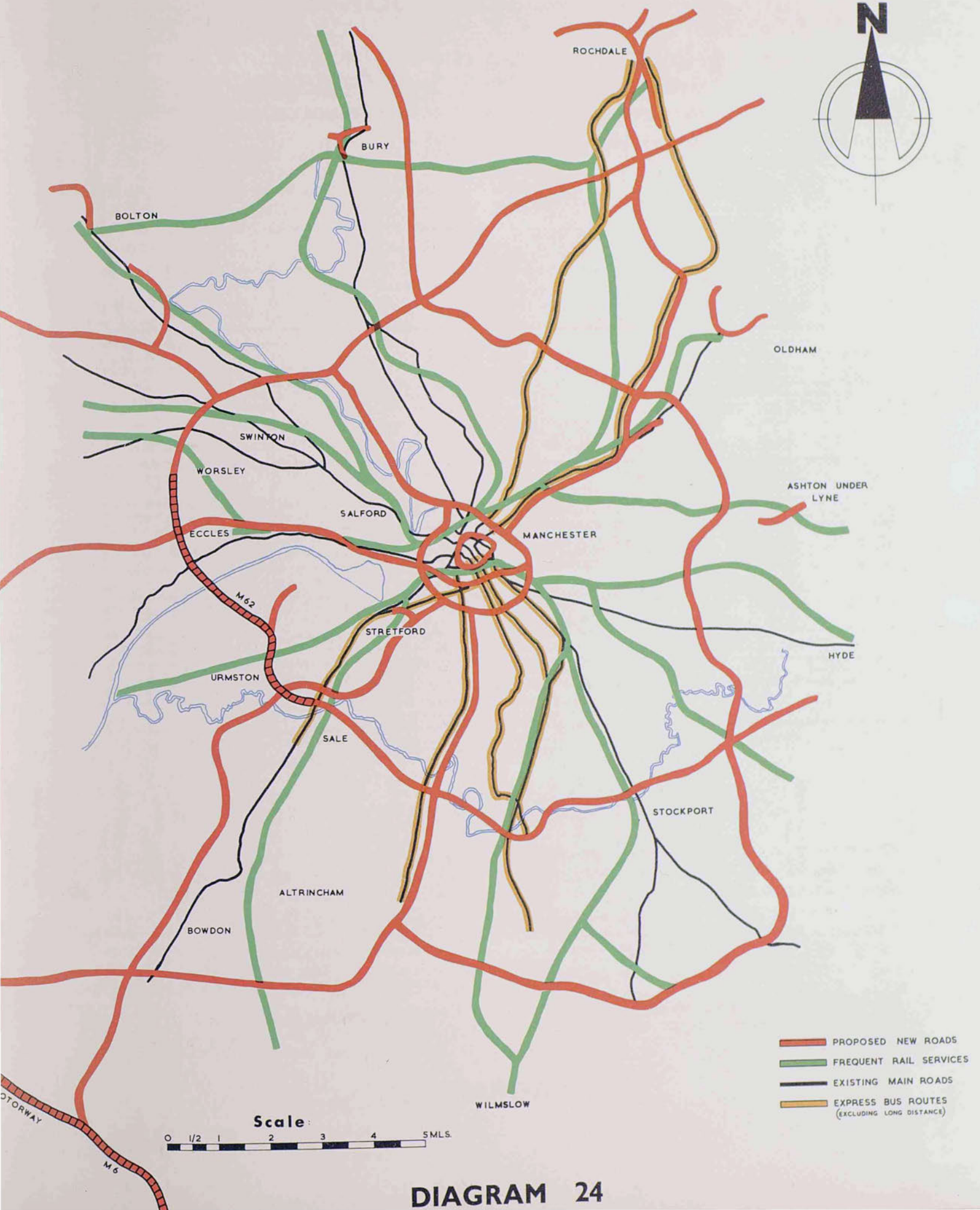


DIAGRAM 24

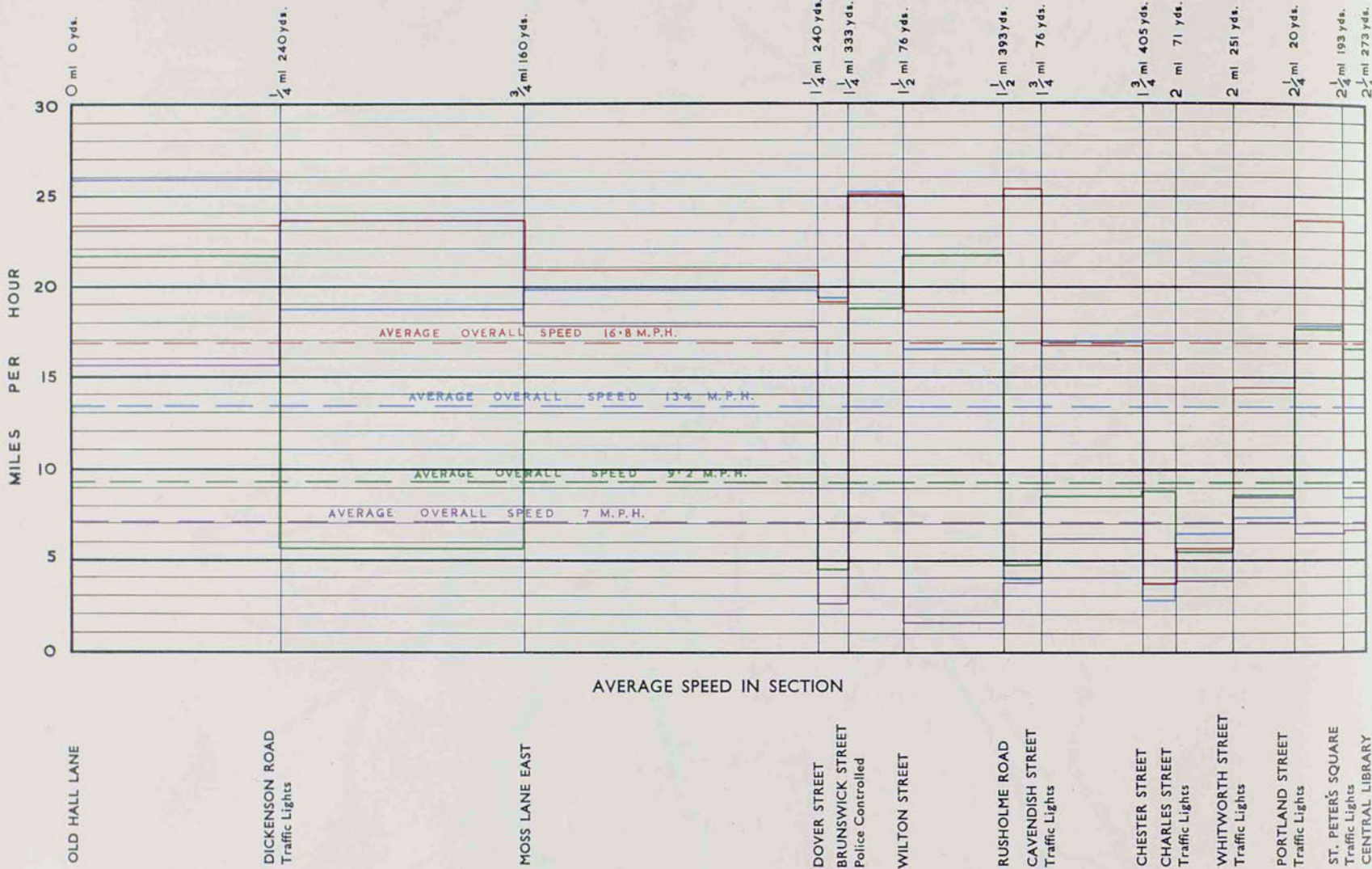
TRAFFIC SPEED SURVEY

WILMSLOW ROAD/OXFORD STREET, MANCHESTER

STARTING POINT - OLD HALL LANE

FINISH - CENTRAL LIBRARY

DISTANCE 2 MILES 713 yds.



STARTING TIME:- 8. 45. 0 secs. a.m.

DURATION OF RUN - 20 mins 40 secs.

STARTING TIME:- 9. 02. 45 secs. a.m.

DURATION OF RUN - 15 mins. 40 secs.

STARTING TIME:- 9. 24. 0 secs. a.m.

DURATION OF RUN - 11 mins. 0 secs.

STARTING TIME:- 9. 34. 15 secs. a.m.

DURATION OF RUN - 8 mins. 35 secs.

DIAGRAM 25

PUBLIC TRANSPORT, INTERIM MEASURES AND TRAFFIC MANAGEMENT

PUBLIC TRANSPORT

NO MATTER WHAT RATE of progress is maintained in the provision of new roads and the improvement and widening of existing roads, the maintenance of an efficient, comfortable and convenient public transport system is essential. A review of the express bus and frequent rail services has been carried out in the Area; the present system and the proposed highway network are shown in Diagram 24, page 67. [333]

As has been mentioned in paragraph 204, page 47, the number of workers travelling into the centre of Manchester by motor car could increase to 11 times the present number if each one had a motor car, and there were sufficient roads to carry them and car parks to hold them. [334]

The Highway Plan now proposed would be required in any case for all-day business use, but the traffic lane capacities would generally be sufficient to carry about two-and-a-half times the present number of commuters with probably some small reduction in speed. Some of these in more senior positions may be allocated car parking space within the buildings in which they work, but the majority would have to use off-street parking structures. It may very well be that most of these structures should be built at the radial road junctions with the Inner Ring Road in order to restrict the amount of traffic within that road, and that from there onwards a central area bus

service should be used to continue the journey to work. [335]

It must be realised that even when the Highway Plan is completed it will be necessary to control the amount of commuter traffic. It would therefore seem that for all time the charge made for off-street parking will have to be used as a commuter regulator. [336]

The vast majority of workers in the central area would still have to be carried by public transport. It is therefore essential that means should be found for sustaining the road and rail public transport commuter services, and that these should be designed to provide the greater degree of comfort and convenience which a rising standard of living will make appropriate. [337]

The provision of adequate car parks or parking structures at suburban stations must surely be regarded as an essential factor in the convenient use of suburban railways by commuters. [338]

Some consideration has been given to the possibility of using a monorail system for commuter traffic on certain radial roads, but it is evident that it would be far more expensive than providing the extra highway capacity in the roads themselves, particularly bearing in mind that if extra traffic lanes were required they would probably be reversible lanes used into the regional centre in the morning and out in the late afternoon. [339]

INTERIM MEASURES

There are of course means, which do not involve constructional works, whereby increases in traffic capacity and improvement in traffic flows can be secured, including the adoption of restrictions on waiting at peak hours, the prohibition of right turning traffic at road junctions, the linking of traffic signals and the adoption of one-way street systems. [340]

The traffic capacity of any road is generally controlled by the capacity of the road junctions through which it passes, and increases in flow

can therefore be secured by physical improvements at such junctions, to give, for example, more waiting capacity at traffic signals, or to provide overpasses in the direction of major flow, or pedestrian subways where pedestrian concentration causes serious interruption to traffic movement. [341]

The increases in capacity which could be obtained in these ways are of course no answer to the overall problem. [342]

TRAFFIC MANAGEMENT

The application of these measures can only be properly determined by a continuous process of traffic management. That is, by the regular study of traffic flows through the main road system and by the investigation of the causes of the delays which these studies disclose. Diagram 25 shows a graphical representation of the traffic flow on Wilmslow Road/Oxford Street, Manchester, and illustrates the speeds attained between adjoining intersections at different times during the morning peak period. A particular section of the route where delays were continually occurring at the time of the survey is clearly seen. [343]

Traffic studies should be developed on a comprehensive basis covering complete routes irrespective of Highway Authority boundaries. To

this extent, the Committee are of the opinion that full advantage might be taken of the valuable experience gained in carrying out the traffic investigations for this Report, and they therefore recommend that the organisation already set up within the Area should remain in being as a Traffic Management Unit to facilitate and co-ordinate traffic studies as required. [344]

Further, in order that the effect of improvements and newly constructed routes on traffic distribution can be assessed, it is suggested that a comprehensive traffic survey of the whole of the Area should be undertaken at regular intervals of possibly five to seven years; on each occasion the Plan should then be reviewed, taking into due account any intervening changes in traffic growth trends. [345]

The Kingsway/Wilmslow Road junction, Manchester, as re-planned and signalled, is an example of how, where traffic does not at present justify multi-level construction works, a worthwhile improvement in traffic control can be achieved relatively inexpensively.



A Pilot Traffic Survey was carried out in September, 1959, at three census points: Bowdon (A.56), Crossford Bridge, Stretford (A.56), and Princess Parkway (A.5103). [346]

The survey was undertaken to gain experience and to enable a comparison to be made between operating the "direct interview" and "postcard" methods, and the results obtained therefrom. [347]

At the Bowdon census point, for example, every fifth vehicle was stopped for direct interview, and all other vehicles received postcard questionnaires. In addition, labels coloured to indicate the time of issue and bearing the census point number were affixed to the windscreens of all vehicles passing through in a northerly direction. The passage of these vehicles to the north was observed at ten separate census points by counting the number of vehicles displaying labels. From this information it was possible to plot the main routes used by the vehicles which had passed through the Bowdon census point on Route A.56. [348]

Table 7 shows the number of questionnaire cards issued and returned, and the number of direct interviews made during an eleven hour period on the 4th September, 1959, at the Bowdon census point. [349]

A comparison of the destination areas of all vehicle types obtained by the postcard and direct interview methods is shown in Table 8, and it can be seen that there is a close measure of agreement in the results obtained for each individual vehicle type from the two methods. [350]

A more comprehensive break-down, following the re-coding of the cards to fit into the May, 1960, Survey Analysis, is shown in Table 9. This shows the numbers of vehicles going to twelve destination areas, as disclosed by the two methods, and again it can be seen that they are practically similar. [351]

The main conclusions on the field work were as follows:—

(a) Direct Interview Method.

The maximum number of vehicles which could be stopped for interview was about 140 vehicles per lane per hour, using two enumerators. Increasing the number of enumerators did not materially increase the rate of flow per interview lane.

(b) Postcard Questionnaire Method.

1. The maximum number of vehicles which could be issued with postcards was 600 vehicles per lane

per hour. Thus, with two traffic lanes each 12 feet wide it was possible to issue postcards to 1200 vehicles per hour in one direction.

2. The optimum number of card distributors was two per lane.

(c) General Conclusions.

The direct interview method is not generally practicable in urban or city areas on heavily trafficked routes, e.g. with more than 500 to 600 vehicles per hour, as a separate lane or lay-by is required to enable enumerators to interview drivers, with a second lane for non-stopping vehicles. In many instances carriageways are too narrow to provide two such lanes in one direction. [352]

A high percentage return of postcards in the pilot survey (55%) and a return of 45% and 47% obtained in two similar surveys undertaken in Manchester in 1957 and 1958, in connection with the proposed Link Road 17/7, were considered to be most satisfactory in view of the comparable results disclosed in Tables Nos. 8 and 9. [353]

Generally speaking, the questions asked in an origin and destination survey of this type should be short and simple, as shown on the sample card Diagram 6, page 11. [354]

From the post card an experienced assistant could determine the last calling place before reaching the census point and next calling place after leaving. [355]

It should be borne in mind that drivers generally do not like being stopped for interview, especially in urban and city areas, and consequently the replies received relating to origin and destination may not be the ones which the interviewer is seeking, particularly the valuable information that is required about the last and next calling places. [356]

Summarising the above, the experience gained clearly shows that the percentage of returns obtainable by using the "postcard" method was substantially greater than could have been secured by using the "direct interview" method; that, as stated in paragraph 35, page 12, the replies received on postcards could be accepted as generally truthful, whereas with the "direct interview" method drivers became irritated by the consequent delay to an extent which may well have affected the veracity of their replies, which in any case in the circumstances were given with little time for adequate consideration. [357]

Table 7
NUMBER OF VEHICLES INVOLVED IN THE DIRECT INTERVIEW AND POSTCARD METHODS
AT THE BOWDON CENSUS POINT.

Vehicle Type	No. of cards distributed	Cards returned		Direct Interviews		Total No. of Vehicles
		Number	Per cent	Number	Per cent	
Cars and Taxis	2,329	1,482	63.7	660	22.1	2,989
Light Goods (under 30 cwt.)	397	265	66.8	135	25.3	532
Heavy Goods	1,682	728	43.3	428	20.3	2,110
Coaches (P.S.V's not included)	87	14	16.2	29	25.0	116
Totals	4,495	2,489	55.4	1,252	21.8	5,747

Table 8

**A COMPARISON OF THE DESTINATION AREAS OF ALL VEHICLE TYPES OBTAINED FROM THE POST CARD AND DIRECT
INTERVIEW SURVEY METHODS DURING THE PERIOD 8 a.m. TO 7 p.m.**

Census Point No. 25, Bowdon. Route A56
4th September, 1959. 8 am.—7 p.m.

POST CARD QUESTIONNAIRE										DIRECT INTERVIEW										
Destination Areas	Cars and Taxis		Light Goods Vehicles under 30 Cwt		Heavy Goods Vehicles		Coaches		Totals of all Vehicles (Col Nos. 1,3, 5 & 7)		Cars and Taxis		Light Goods Vehicles under 30 Cwt		Heavy Goods Vehicles		Coaches		Totals of all Vehicles (Col Nos. 11, 13, 15 & 17)	
	(1)	(2) % of Col. 1	(3)	(4) % of Col. 3	(5)	(6) % of Col. 5	(7)	(8) % of Col. 7	(9)	(10) % of Col. 9	(11)	(12) % of Col. 11	(13)	(14) % of Col. 13	(15)	(16) % of Col. 15	(17)	(18) % of Col. 17	(19)	(20) % of Col. 19
Trafford Park	40	2.7	10	3.8	57	7.8	1	7.1	108	4.7	22	3.3	3	2.2	48	11.2	2	6.9	75	6.0
Stretford	34	2.3	9	3.4	10	1.3	0	—	53	2.1	12	1.8	8	5.9	7	1.6	1	3.5	28	2.2
Manchester	413	27.9	79	29.8	205	28.3	9	64.4	706	28.1	196	29.7	42	31.1	127	29.7	14	48.2	379	30.2
Salford	81	5.5	16	6.0	54	7.3	1	7.1	152	6.1	44	6.7	10	7.4	30	7.0	—	—	84	6.7
Other Areas	914	61.6	151	57.0	402	55.3	3	21.4	1,470	59.0	386	58.5	72	53.4	216	50.5	12	41.4	686	54.9
Totals	1,482	100.0	265	100.0	728	100.0	14	100.0	2,489	100.0	660	100.0	135	100.0	428	100.0	29	100.0	1,252	100.0

NOTE: The figures quoted are the actual post cards returned and the number of direct interviews made.

Table 9

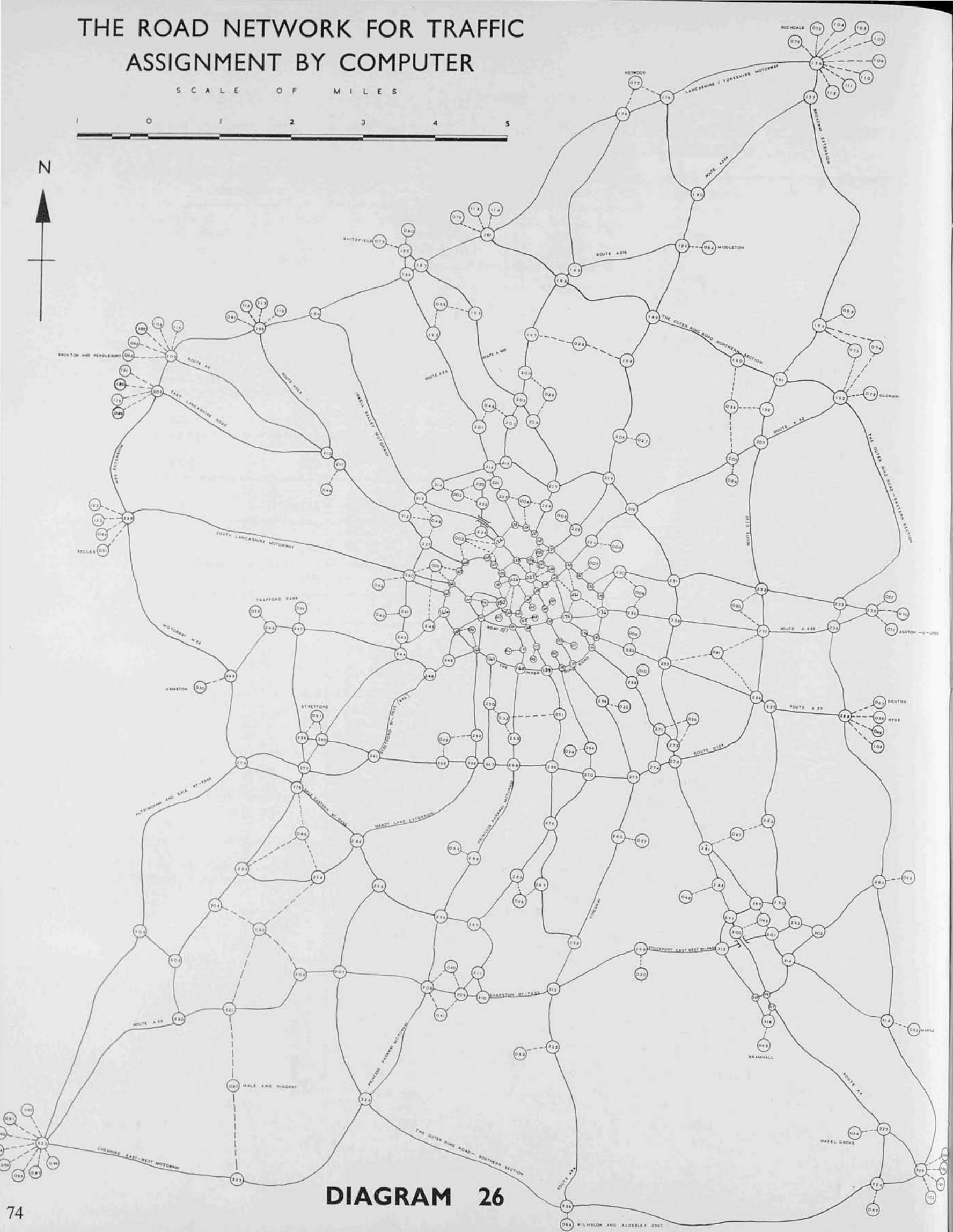
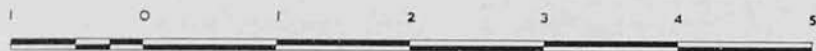
COMPARISON OF DESTINATIONS OF TRAFFIC PASSING THROUGH THE BOWDON CENSUS POINT AS DISCLOSED BY DIRECT INTERVIEW AND POSTCARD METHODS.

<i>Zone Number</i>	<i>Destination</i>	<i>Direct Interview</i>		<i>Postcard</i>	
	<i>Area</i>	<i>Total Daily Traffic</i>	<i>% of Total Traffic Through Census Point</i>	<i>Total Daily Traffic</i>	<i>% of Total Traffic Through Census Point</i>
102	Manchester Central	1,246	17.0	1,220	16.6
203	Manchester North & East	243	3.3	178	2.4
204	Manchester South	367	5.0	379	5.1
205	Manchester Wythenshawe	141	1.9	159	2.2
101 206	Salford	572	7.8	476	6.5
207 208	Stockport	343	4.7	312	4.3
216 217	Trafford Park	391	5.3	443	6.0
342	Sale	397	5.4	385	5.3
343	Altrincham	840	11.5	861	11.8
360	Sheffield Barnsley Doncaster Rotherham	189	2.6	178	2.4
361	Huddersfield Wakefield Leeds	290	3.9	328	4.4
	Combined total to all other destinations	2,318	31.6	2,418	33.0
	Total traffic through Census Point	7,337	100.0	7,337	100.0

NOTE: The figures are based on Table No. 8 and are calculated 16 hour one-way flows, taking into account the percentage returns of each vehicle type for each hour over the 11 hour period of the Survey. The 16 hour figures were obtained by increasing the 11 hour figures by 25%.

ASSIGNMENT BY COMPUTER

SCALE OF MILES

**DIAGRAM 26**

APPENDIX B

TRAFFIC ASSIGNMENT BY ELECTRONIC COMPUTER

The assignment of traffic by computer has been undertaken previously in this Country for relatively small road networks. However, in the case of the S.E.L.N.E.C. Area, the road network was much larger than any of those previously considered, and the powerful I.B.M. 7090 computer was used. [358]

The census point information from the Inner Cordon Survey (see paragraph 25, page 11) was fed into the computer from the punched cards, referred to in paragraph 41, page 13, and in this way a summary of the total traffic crossing the Inner Cordon, and travelling between any two coding districts was produced. [359]

A further series of punched cards was prepared to represent the road network of the Area. Diagram 26, shows this road network suitably coded for such representation. Each punched card related to a particular stretch of road between two of the numbered intersections shown in the diagram and indicated the length, the code numbers of the intersections at its extremities and the assumed traffic speed thereon which was to be applied for a particular investigation. [360]

By using the two sets of information, the computer was

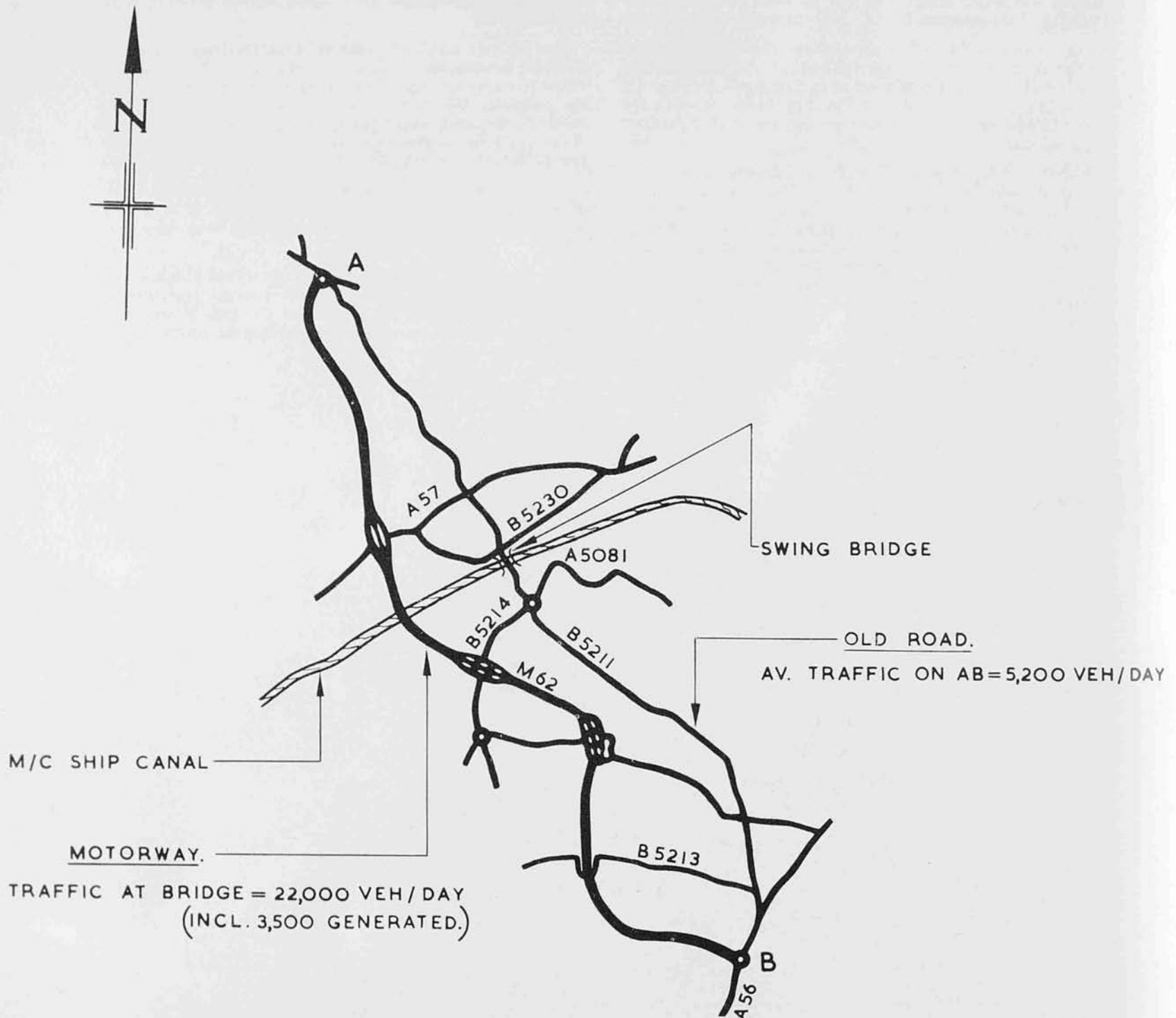
able to indicate the route which would be used by vehicles travelling between any pair of coding districts, taking into account the distance and speeds available. The volumes of turning traffic at certain intersections on the network were also obtained. [361]

This is a very simple explanation of the complicated analysis of traffic movements which was carried out on the computer. There is no doubt that many other studies can be applied; for example, the estimation of likely traffic distribution related to the actual capacities of the roads, and the prediction of future traffic volumes by the application of different vehicle growth factors to individual coding districts. [362]

The computer could also be used to analyse the effect of various road construction programmes and to determine which road proposals would provide the best economic return. [363]

The assignment of traffic outside the Inner Cordon was undertaken by manual methods, but this would have been an extremely lengthy process within the Cordon. It was only when experience had made this evident that the computer was employed. [364]

STRETFORD-ECCLES MOTORWAY BY-PASS M 62
ECONOMIC ASSESSMENT



TRAFFIC VOLUMES ARE AT 1962 LEVEL

DIAGRAM 27

STRETFORD/ECCLES BY-PASS M.62 (Diagram 27)

The assessment based on conditions in 1962, has been made in accordance with the methods given in Institution of Civil Engineers Paper No. 6403 "The Economic Assessment of Returns from Road Works". [365]

Measurements of conditions have been carried out as they occur at present on both the Motorway M.62 and the old route. Details of these are as follows:—

Motorway

(length 5.95 miles)

Average traffic over full length of Motorway	18,200 vehs/day
Traffic over High Level Bridge	22,000 vehs/day
Average journey speed	45 m.p.h.
Average cost per vehicle-mile for this speed as given by the above mentioned paper	6.7d.

Old Route

(length 5.56 miles)

Average traffic over full length between Motorway terminals	5,200 vehs/day
Average journey speed	21.1 m.p.h.
Average cost per vehicle-mile for this speed	8.9d.

Estimated conditions on old route if Motorway had not been constructed

Average traffic	16,000 vehs/day
Computed average journey speed	12.5 m.p.h.
Average cost per vehicle-mile	12.0d.
Total average traffic on Motorway and old route	23,400 vehs/day
Extra traffic on Motorway and old route	$23,400 - 16,000 = 7,400$

This traffic has been attracted from other routes or has been generated in the meantime. For example, some vehicles which previously passed through Manchester on A.6 (Preston-Manchester-Derby Trunk Road) or A.56 (Bury-Manchester-Chester Trunk Road) now use the Stretford/Eccles By-pass.

Operating Costs

Present daily operating costs on Motorway and old route

$$= \frac{1}{240} [18,200 \times 5.95 \times 6.7 + 5,200 \times 5.56 \times 8.9]$$

$$= £3,040 + £1,100 = £4,140$$

Operating costs for the same volume of traffic if motorway had not been constructed.

$$= \frac{1}{240} [16,000 \times 5.56 \times 12.0 + 7,400 \times 5.56 \times \frac{(12.0 + 6.7)}{2}]$$

$$= £4,450 + £1,600 = £6,050$$

The operating costs for the attracted and generated traffic assume a linear variation between the saving for a vehicle which benefits by an amount equivalent to a transfer from the old route to the saving for a vehicle which only just finds it better to use the Motorway.

$$\text{Daily Saving} = £6,050 - £4,140 = £1,910$$

$$\text{Annual Saving} = 320 \times £1,910 = £610,000$$

Accident Costs

Accident rate on old route system = 4.0 accidents per million vehicle miles.

Accident rate on Motorway = 0.34 accidents per million vehicle miles.

Present annual accident frequency on Motorway and old route

$$= (18,200 \times 0.34 \times 5.95 + 5,200 \times 4.0 \times 5.56) \times \frac{320}{10^6}$$

$$= 12 + 37 = 49$$

Estimated annual accident frequency for the same traffic if Motorway had not been constructed

$$= 23,400 \times 4.0 \times 5.56 \times \frac{320}{10^6}$$

$$= 166$$

$$\text{Estimated annual accident saving} = 166 - 49 = 117$$

$$\text{Value} = 117 \times £560 = £65,000$$

Maintenance

The annual cost of maintenance on the Stretford/Eccles By-pass = £20,000

$$\text{Net annual saving} = £610,000 + £65,000 - £20,000 = £655,000$$

Approximate cost of scheme = £5,450,000

Rate of return = 12% [366]

Allowing for an annual increase in traffic of $7\frac{1}{2}\%$ the road will have paid for itself by 1967. It was opened to traffic in 1960. [367]

APPENDIX D

TRAFFIC GROWTH

In 1960 the number of motor vehicles licensed in Great Britain was 9.38 million, of which 5.5 million were private cars, 1.88 million were motor cycles and 2 million were other vehicles (including tractors). [368]

As mentioned in Chapter 6, paragraph 95, the Road Research Laboratory have suggested that by the year 2010, when it is estimated the population in Great Britain will be 60 million persons, 36 million vehicles will be in use. [369]

By projecting the present trends (Diagram 28) these might comprise 26.5 million private cars (2.3 persons per car), 3.9 million motor cycles, and 5.6 million other vehicles. On the same trends, the number of vehicles licensed in 1980 would be 25 million, of which 17.5 million might be private cars, 3.5 million motor cycles and 4.0 million other vehicles. [370]

These estimates forecast that by 1980 vehicles licensed will amount to about $2\frac{2}{3}$ times those licensed in 1960, and by 2010 to over $3\frac{3}{4}$ times. [371]

The ratio of vehicles licensed to population within the Area is about 0.7 of the national average, and it would seem

reasonable to expect that this will be rectified in due course. However, the population trends for the Area up to 1981 indicate that the population will remain static, due to migration from the Area. If this trend continues and the ratio of vehicles licensed to population does increase to the national average, the vehicles licensed in the Area on the basis of the Road Research Laboratory estimate (excluding population growth) would amount in the year 2010 to $4\frac{1}{2}$ times that of 1960. [372]

The future increase in traffic depends of course on the extent to which licensed vehicles are used. It will be seen from Diagram 29*, that since the return to normality following the end of the last war there has been no substantial change, other than that which arose in 1957 at the time of the Suez crisis. [373]

However, provided public transport is adequately maintained (see Chapter 9), a considerable proportion of the larger number of private cars licensed in the future may be mainly used for pleasure only. Their use may well create road problems at week-end and holiday periods, but these could be reduced, as at present, by spreading the times chosen for travelling. [374]

*Diagram 29 was contained in a Paper entitled "Traffic Trends and Vehicle Miles in Great Britain, 1938/1960" by J. R. Scott, B.Sc., A.Inst.P., and J. C. Tanner, M.A. (Road Research Laboratory, D.S.I.R.) and published in "The Surveyor", 12th May, 1962.

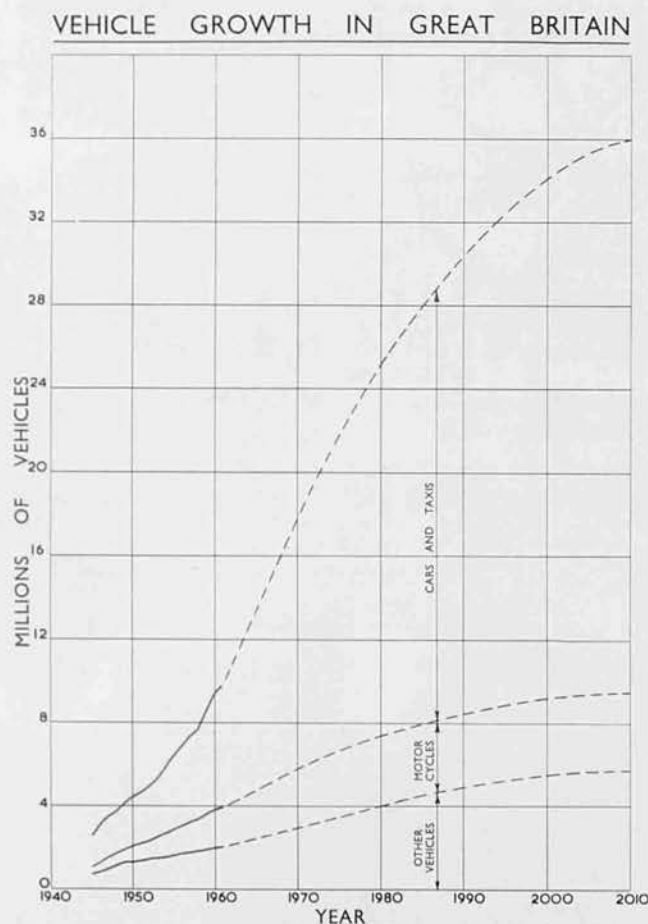


DIAGRAM 28

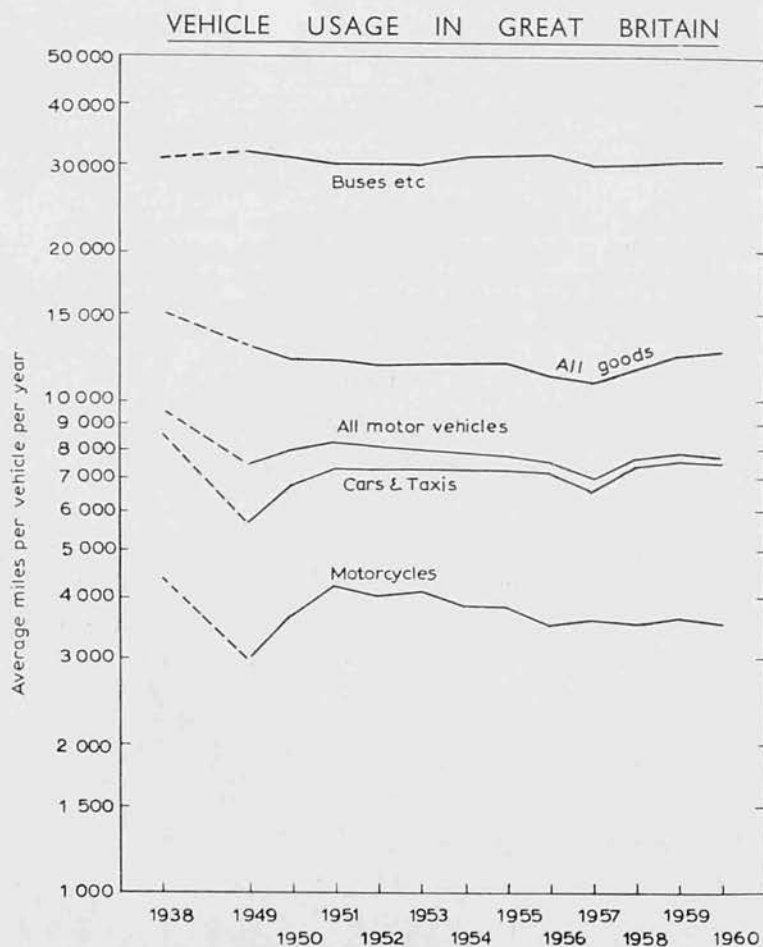


DIAGRAM 29

APPENDIX E

LIST OF SCHEMES AND FINANCE

(a) TRUNK ROAD SCHEMES

*Ref. No.	Description	Cost £	Ref. No.	Description	Cost £
101	A.56. Improvement from Derbyshire Lane to Talbot Road including Longford Bridge.	240,000 (L,S)	121	A.56 Diversion. Bury Easterly By-pass (Lancashire/Yorkshire Motorway to Ramsbottom).	4,480,000 (L)
102	A.56. Improvement of Chester Road at Edge Lane (2nd Stage).	260,000 (S)	122	A.62. Improvement through Failsworth (widening or new road).	1,300,000 (L)
103	A.57. Godley Arches to junction with A.560.	775,000 (C)	123	A.56. Improvement through Prestwich.	1,500,000 (L)
104	A.57. Improvement from Manchester Boundary to the Outer Ring Road, Denton.	300,000 (L)	124	A.56. Improvement from A.665 Whitefield to Bury Boundary, Whitefield.	620,000 (L)
105	A.57. Hyde By-pass.	1,300,000 (C)	125	A.6 Diversion. Extra lanes on the Manchester/Preston Motorway from the junction with the Farnworth Link to the junction with the Lancashire/Yorkshire Motorway.	500,000 (L)
106	Cheshire East-West Motorway.	3,500,000 (C)	126	A.6. Junction with A.523 to the Outer Ring Road.	200,000 (C)
107	A.56. Improvement of Chester Road from Market Street to Barton Road.	300,000 (S)	127	A.6. The Outer Ring Road to Marple U.D. Boundary.	260,000 (C)
108	A.560 Sharston By-pass. Stage 1 Stage 2	1,200,000 (C) 500,000 (C)	128	A.523. Widening from Hazel Grove Boundary to junction with A.6.	250,000 (C)
109	A.6. Diversion and Manchester/Preston Motorway from A.580/Lancashire/Yorkshire Motorway to junction with A.6. at Middle Hulton.	4,000,000 (L)	129	A.560. By-pass from Stockport Boundary to junction with the Outer Ring Road.	600,000 (C)
110	A.580. Improvement from A.6 (Salford) to Lancashire/Yorkshire Motorway.	1,500,000 (L)	130	A.560. By-pass from the Outer Ring Road to junction with A.6113 widening to A.627 and link to B.6103.	1,400,000 (C)
111	A.6. Stockport boundary to junction with A.523.	800,000 (C)	131	A.560. Widening from A.627 to junction with A.57.	400,000 (C)
112	A.57. Improvement and Diversion (Denton Internal Relief Road) from the Outer Ring Road to Cheshire Boundary.	2,430,000 (L)		Trunk Road Schemes Grand Total	£51,435,000
113	Altrincham and Sale By-pass.	4,225,000 (C)		The following scheme is included for information but is not incorporated in the Summary of Estimated Costs of the major highway proposals:—	
114	A.56 Diversion. Stretford By-pass from M.62 to the Manchester Boundary.	6,470,000 (L)	132	New Route. Lancashire/Yorkshire Motorway from A.580 to the Milnrow Boundary.	14,000,000 (L)
115	A.56. Flyover at junction with A.5063 (White City).	1,650,000 (L)		Letters in brackets indicate Agents for Ministry of Transport. (C) Cheshire C.C. (L) Lancashire C.C. (S) Stretford M.B.	
116	A.56. Improvement from Lancashire/Yorkshire Motorway to A.665, Whitefield.	140,000 (L)		Apportionment of total cost: Cheshire C.C. £15,410,000 Lancashire C.C. £36,025,000	
117	A.6, A.580. Flyover at junction with A.6 and A.666 Swinton.	1,000,000 (L)			
118	Irwell Valley Motorway from Salford Boundary to Lancashire/Yorkshire Motorway. Includes junction with Lancashire/Yorkshire Motorway.	3,500,000 (L)			
119	A.56 Link. Multi-level connection between the A.56 Diversion and the Inner Ring Road.	2,475,000 (L)			
120	A.56 Link. Link from the junction of A.56 and A.5063 (White City) to the A.56 Diversion.	3,360,000 (L)			

*Road scheme reference number shown on the Highway Plan.

(b) JOINT CLASSIFIED ROAD SCHEMES

<i>Ref. No.</i>	<i>Description</i>	<i>Cost £</i>	<i>Ref. No.</i>	<i>Description</i>	<i>Cost £</i>
201	The Outer Ring Road, Northern Section, Lancashire/Yorkshire Motorway to A.62.	3,670,000 (M) 8,000,000 (L)	208	Bolton Outer Ring Road, Southern and South Western Sections.	230,000 (L) 400,000 (B)
	Total	11,670,000		Total	630,000
202	The Outer Ring Road, Eastern Section, A.62 to A.523.	950,000 (O) 6,000,000 (L) 900,000 (St) 2,520,000 (C)	209	Hardy Lane Extension.	180,000 (M) 200,000 (C)
	Total	10,370,000		Total	380,000
203	The Outer Ring Road, Southern Section, A.523 to Princess Parkway Motorway	1,500,000 (M) 3,480,000 (C)	210	A.6 Improvement and Stockport North/South By-pass.	3,245,000 (M) 4,100,000 (St)
	Total	4,980,000		Total	7,345,000
204	Northenden By-pass and Sale Eastern By-pass from Sharston By-pass to A.56.	1,940,000 (M) 1,250,000 (C) 90,000 (L)	211	Broadway Route from A.62 to Route 205.	160,000 (M) 2,300,000 (L)
	Total	3,280,000		Total	2,460,000
205	Broadway Extension to Lancs-Yorks Motorway with links to Oldham, Middleton & Rochdale.	1,000,000 (R) 3,049,000 (L) 89,000 (O)	212	A.666 Diversion. Farnworth and Kearsley By-pass.	700,000 (B) 1,230,000 (L)
	Total	4,138,000		Total	1,930,000
206	South Lancashire Motorway from S.E.L.N.E.C. boundary to Link Road 17/7-Chester Road intersection in Manchester.	8,300,000 (S) 5,700,000 (L) 750,000 (M)	Joint Classified Road Schemes ————— Grand Total £81,783,000		
	Total	14,750,000			
207	The Inner Ring Road.	12,450,000 (M) 5,600,000 (S) 1,800,000 (L)	Letters in brackets indicate apportionment of total cost to each Highway Authority. (B) Bolton C.B. (C) Cheshire C.C. (L) Lancashire C.C. (M) Manchester C.B. (O) Oldham C.B. (R) Rochdale C.B. (S) Salford C.B. (St) Stockport C.B.		
	Total	19,850,000			

(c) SCHEMES WHOLLY WITHIN AN AUTHORITY'S AREA

(i) BOLTON

<i>Ref. No.</i>	<i>Description</i>	<i>Cost £</i>	<i>Ref. No.</i>	<i>Description</i>	<i>Cost £</i>
301	A.6057. Trinity Street Bridge.	265,000	319	A.676. Tonge Moor Road Widening. Waterloo Street to Borough boundary.	500,000
302	A.666. Inner Relief Road Eastern Limb.	2,096,000	320	B.6202. Tudor Avenue Widening.	130,000
303	A.6056. Inner Relief Road, Crook Street, Deane Road and Derby Street.	1,139,000	321	A.675. Belmont Road Widening. Blackburn Road to Borough boundary.	330,000
304	A.579. Great Moor Street.	180,000	322	A.579. St. Helens Road and Derby Street Widening, Crook Street to Outer Ring Road.	820,000
305	A.676. Folds Road Widening. Kay Street to Waterloo Street.	200,000	323	B.6207. Waterloo Street, Turner Street, Windley Street and Kestor Street Widening.	330,000
306	A.666. Manchester Road Widening. Orlando Street to Raikes Lane.	380,000	324	A.6057. Bradford Street Widening, Bridgeman Street to Bury Road.	100,000
307	A.666. Manchester Road Widening. Raikes Lane to Green Lane.	130,000	325	B.6226. Chorley Old Road Widening, Chorley New Road to Whitecroft Road.	300,000
308	B.6202. Mayor Street Improvement. Deane Road to Park Road.	130,000	326	A.666. Blackburn Road Widening. Belmont Road to Borough boundary.	150,000
309	A.673. Inner Relief Road. St. George's Road.	1,384,000	327	A.673. Chorley New Road Widening. Chorley Old Road to Borough boundary.	400,000
310	A.579. Inner Relief Road. Moor Lane to Marsden Road.	727,000	328	A.58. Beaumont Road Improvement.	100,000
311	Inner Relief Road. Chorley Street.	263,000	329	A.58. Moss Bank Way Improvement.	180,000
312	A.666. Blackburn Road Improvement. Kay Street to Bow Street.	350,000	330	A.58. Crompton Way Improvement.	200,000
313	A.6057. Inner Relief Road. Trinity Street and Bridgeman Street.	226,000	331	Outer Ring Road. Eastern Section, Manchester Road to Crompton Way.	400,000
314	A.579. Church Wharf, Church Bank, and Bury New Road, Widening.	200,000			12,810,000
315	A.58 and A.579. Bury Road Widening from Bradford Street to Borough boundary.	500,000		Transferred from Joint Classified Road Schemes Schedule.	1,100,000
316	A.6140. Deane Road Widening. Derby Street to Blackshaw Lane.	200,000		Lump sum for schemes under £100,000.	560,000
317	A.58 and A.6140. Wigan Road Widening, Blackshaw Lane to Borough boundary.	200,000			
318	A.666. Blackburn Road Widening. Halliwell Road to Belmont Road.	300,000		Grand Total	£14,470,000

(ii) BURY

<i>Ref. No.</i>	<i>Description</i>	<i>Cost £</i>	<i>Ref. No.</i>	<i>Description</i>	<i>Cost £</i>
351	New Route. Proposed circulatory road between Rochdale Road and Knowsley Street.	200,000	359	Part B.6218. Extension and improvement of Market Street from Wellington Road to proposed Easterly By-pass including improvement to bridge over Railway north of Wellington Road.	280,000
352	New Route. Internal Relief Road—East-West Section from Bury Bridge to Walmersley Road.	600,000	360	A.56 Manchester Road from the termination of the proposed Internal Relief Road to the C.B. boundary.	550,000
353	New Route. Internal Relief Road—Manchester link from above road to Knowsley Street.	500,000	361	A.58. Bolton Road from Bury Bridge to C.B. boundary (Bolton Road).	295,000
354	New Route. Internal Relief Road—Rochdale Link from Walmersley Road to Rochdale Road at Bond Street.	200,000	362	New Route. Walmersley Road to Burrs, together with widening of Woodhill Road from Burrs to Crostons Road.	220,000
355	A.56. The Rock from Union Street to Walmersley Road.	132,000	363	New Route. North West inter district road between above road and Ainsworth Road.	330,000
356	B.6213/B.6214. Crostons Road from Bury Bridge to proposed link road.	110,000			3,860,000
357	A.58. Rochdale Road from circulatory road to C.B. boundary or proposed Easterly By-pass.	263,000		Lump sum for schemes under £100,000.	365,000
358	A.58. Bolton Street, from proposed internal relief road to Market Place.	180,000		Grand Total	<u>£4,225,000</u>

(iii) CHESHIRE

<i>Ref. No.</i>	<i>Description</i>	<i>Cost £</i>	<i>Ref. No.</i>	<i>Description</i>	<i>Cost £</i>
401	A.560. Altrincham Level Crossing.	400,000	421	B.5094 Stanley Road, Cheadle and Gatley.	200,000
402	A.34. Griffin Farm—Kingsway, Cheadle.	400,000	422	B.5095 Hulme Hall Road (incl. Rly. Bridge) Cheadle and Gatley.	300,000
403	A.34. Wilmslow By-pass to Waggon and Horses P.H.	800,000	423	B.6103 Hazel Grove—Bredbury.	600,000
404	A.538. Hale Barns—Wilmslow.	2,000,000	424	B.6170 Dukinfield (Hyde to County Boundary).	800,000
405	A.5102. Bramhall—Wilmslow.	2,000,000	425	B.6175 Huddersfield Road, Stalybridge.	250,000
406	A.635. Stalybridge from A.6018 to County Boundary.	600,000	426	Cl. III and u/c Glebelands Road, Sale.	200,000
407	A.6018. Stalybridge—Mottram (A.635 to Borough Boundary at Roe Cross).	660,000	427	Cl. III Station Road and Ravens-oak Road (Incl. Rly. Bdge.) Cheadle and Gatley.	300,000
408	A.635. County Boundary to A.6018.	300,000	428	Cl. III Ladybridge Road, Cheadle and Gatley.	100,000
409	A.6113. Hyde. A.627. Hyde (Newton Street to A.6113).	500,000	429	Cl. III Gillbent Road, Cheadle and Gatley.	100,000
410	B.5311. Harboro Road and B.5166 Carrington Lane, Sale.	300,000	430	Cl. III Chester Road Rly. Bridge, Hazel Grove and Bramhall.	110,000
411	B.5311. Marsland Road and Old Hall Road, Sale.	350,000	431	Cl. III Adswood Rly Bridge Cheadle and Gatley.	150,000
412	B.5160 Charcoal Road and Park Road, Bowdon.	140,000	432	Cl. III Sinderland Lane on each side of the junction with the Altrincham and Sale By-pass.	100,000
413	B.5161 Langham Road, B.5162 Southdowns Road, Bowdon and Southdowns Road and Heather Road, Hale.	220,000			13,450,000
414	B.5162 Park Road, Hale.	180,000		Transferred from Joint Classified Road Schemes Schedule.	7,450,000
415	B.5165 Thorley Lane, Altrincham.	110,000		Lump Sum for schemes under £100,000.	1,600,000
416	B.5165 Park Road, Altrincham.	280,000		Total for Classified Road Schemes.	22,500,000
417	B.5166 Dane Road, Sale.	200,000		Transferred from Trunk Road Schemes Schedule.	15,410,000
418	B.5166 Styal Road, Cheadle.	200,000			
419	B.5166 Styal Road, Wilmslow.	400,000			
420	B.5086 Knutsford Road, Wilmslow.	200,000		Grand Total	<u>£37,910,000</u>

(iv) LANCASHIRE

<i>Ref. No.</i>	<i>Description</i>	<i>Cost £</i>	<i>Ref. No.</i>	<i>Description</i>	<i>Cost £</i>
502	New Route. Link from M.62 at Lostock Circle to Ashburton Road A.5081 in Trafford Park, Stretford and Urmston.	875,000	520	A.6044. Improvement from A.665 to A.576, Prestwich.	130,000
503	A.576, A.664. Link Road from A.576 to A.664, Middleton Town Centre, Middleton.	135,000	521	A.665. Improvement from A.6044 to A.56, Prestwich and Whitefield.	545,000
504	M.62. Extension from Worsley Court House to A.580/Lancashire/ Yorkshire Motorway Junction.	1,300,000	522	B.6189. Improvement from Castle Street to Hyde Road, Chadderton and Middleton.	130,000
505	New Route. Link from Manchester/Preston Motorway to the Farnworth and Kearsley Bypass (A.666).	350,000	523	Cl. III. Improvement of Lostock Road from M.62 to Davyhulme Circle, Urmston.	145,000
506	A.635 Stamford Street Diversion Ashton-U-Lyne.	1,010,000	524	M.62. Increase in width of the Stretford/Eccles By-pass from 2 to 3 lanes between South Lancashire Motorway and Worsley Court House.	400,000
507	A.5063 and A.5081. Improvement of A.5063 from junction with A.56 at White City and gyratory scheme at junction with A.5081, Trafford Park, Stretford.	590,000	525	A.668. Diversion from Stand Lane—Blackburn Street Junction to A.6053, Radcliffe.	1,014,000
508	Flyovers at intersections on Link from M.62 to A.5081. Stretford and Urmston.	625,000	526	A.635. Improvement from the Manchester Boundary to the Outer Ring Road, Droylsden and Audenshaw.	120,000
509	A.669 and A.664. Improvement of A.669 from A.664 (Manchester New Road) to Corporation Street and Link Road from A.669 to A.664 Middleton Town Centre, Middleton.	530,000	527	A.58. Improvement from Bolton Boundary to Bury Boundary, Radcliffe.	530,000
510	A.6017. Improvement from Guide Lane Railway Bridge to Nelson Street, Audenshaw.	295,000	528	A.662. Improvement from Manchester Boundary to the Outer Ring Road, Droylsden.	620,000
511	B.5215. Improvement from Kings Road to proposed improvement at junction with Chester Road, A.56, Stretford.	275,000	529	A.6043. Diversion from Turner Lane to Memorial Gardens, Ashton-U-Lyne.	480,000
512	B.5215. Improvement and Diversion from A.56 to B.5211, Stretford.	400,000	530	A.635. Improvement from Stamford Street Diversion to the Cheshire Boundary, Ashton-U-Lyne.	205,000
513	A.663. Improvement and Diversion from B.6194, to Store Street, Crompton. (Crompton Internal By-pass).	597,000	531	B.5158. Improvement from Cheshire Boundary to and including Flixton Railway Station Bridge, Urmston.	175,000
514	B.5214. Improvement from Davyhulme Circle to M.62 Urmston.	141,000	532	B.6211. Diversion from A.6053 to Radcliffe Moor Road, Radcliffe.	130,000
515	A.57. Diversion from Church Street to Corporation Road, Eccles.	300,000	533	Cl. III. Improvement of Barton Road from Sevenways to M.62, Stretford.	275,000
516	A.665. Improvement from the Salford Boundary to A.6044 Prestwich.	160,000	534	A.635. Improvement of Black Rock Railway Bridge and Approaches, Mossley.	185,000
517	A.6046. Improvement from A.6045 to A.6047 (A.58 Diversion), Heywood.	450,000	535	A.627, B.6170. Improvement and Diversion from A.6043 to Cheshire Boundary, Ashton-U-Lyne.	845,000
518	A.6046. Improvement from Lancashire/Yorkshire Motorway to A.6045, Heywood.	125,000	536	A.6017. Improvement from A.635 to Guide Lane Railway Bridge, Ashton-U-Lyne.	390,000
519	A.6017. Diversion from Nelson Street to Denton Road Leather Works, Audenshaw.	275,000	537	A.6044. Diversion from Langley Road to Springvale, Prestwich.	285,000
			538	A.576. Improvement from A.6045 to Middleton Town Centre (Link Road to A.664), Middleton.	580,000

<i>Ref. No.</i>	<i>Description</i>	<i>Cost £</i>	<i>Ref. No.</i>	<i>Description</i>	<i>Cost £</i>
539	A.58. Improvement from Bury Boundary to Heywood Centre (A.6046/A6047).	1,235,000	560	A.635. Improvement from Lancashire Cottages to Roaches Canal Bridge, Mossley.	275,000
540	A.58. Improvement from Heywood Centre to Rochdale Boundary, Heywood.	555,000	561	A.670. Improvement from Mellor Road to Gorse Lane, Ashton-U-Lyne.	115,000
541	A.627. Improvement from Oldham Boundary to Broadway, A.663, Royton.	345,000	562	A.664. Improvement from Market Place (A.669 link) to A.6046, Middleton.	475,000
542	A.663. Improvement from A.627 to B.6194 Diversion, Royton and Crompton.	365,000	563	A.664. Improvement from Manchester Boundary to Middleton Town Centre (Link Road to A.576) Middleton.	200,000
543	A.663. Improvement from Store Street to Jubilee Inn, Crompton.	367,000	564	A.669. Improvement from A.663 to Oldham Boundary, Chadderton.	125,000
544	A.663, A.640. Improvement from Jubilee Inn, Crompton to Lancashire/Yorkshire Motorway Link, Milnrow.	410,000	565	A.668. Improvement from A.665 to Stand Lane/Blackburn Street Junction, Radcliffe.	240,000
545	B.6194. Improvement and Diversion from Oldham Borough Boundary to A.663, Royton and Crompton.	815,000	566	A.6053. Diversion from Bury Street to Wild Street, Radcliffe.	105,000
546	B.6390. Improvement from A.635 to Coronation Square, Audenshaw.	415,000	567	A.6053. Improvement from Town Hall to Bury Road, Radcliffe.	180,000
547	A.669. Improvement from A.664 Link to B.6195, Middleton.	825,000	568	A.6017. Improvement from A.57 to Three Lane Ends, Denton.	370,000
548	A.635. Improvement from the Outer Ring Road to A.662, Audenshaw.	200,000	569	A.669. Diversion from Oldham Boundary to Yorkshire Boundary, Lees.	295,000
549	A.635. Improvement from A.662 to A.6017, Audenshaw and Ashton-U-Lyne.	475,000	570	A.57. Improvement from Corporation Road to Green Lane, Eccles.	540,000
550	A.635. Viaduct to provide flyovers on Stamford Street Diversion at junctions of A.6017 and A.627 Diversion Ashton-U-Lyne.	2,750,000	571	B.5211. Diversion from Ermen Road to junction of New Road and Worsley Road, Eccles.	360,000
551	A.627. Improvement from Oldham Boundary to A.6043, Ashton-U-Lyne.	865,000	572	B.6189. Diversion from Corporation Street Roundabout on A669, to the junction of Kirkway and Townley Street, Middleton.	125,000
552	A.670. Improvement from Memorial Gardens to Queens Road, B.6194 Ashton-U-Lyne.	310,000	573	A.58. Continuation of Diversion in Rochdale to rejoin A.58 in Wardle.	255,000
553	A.670. Improvement from Lees Road to A.6050, Mossley.	325,000	574	B.5218. Improvement of Chorlton Road from Manchester Boundary South to Manchester Boundary North, Stretford.	300,000
554	A.6043. Improvement from A.627 to Turner Lane, Ashton-U-Lyne.	135,000	575	B.5218. Improvement of Upper Chorlton Road from Seymour Grove, B.5217 to Chorlton Road, Stretford.	215,000
555	B.5217. Improvement of Seymour Grove from the Manchester Boundary to Talbot Road, Stretford.	220,000	576	A.640. Diversion from Rochdale Boundary to Lancashire/Yorkshire Motorway Link, Milnrow.	375,000
556	Cl. III. Improvement of Stamford Road from Coronation Square to A.6017, Audenshaw.	160,000			31,452,000
557	A.668. Improvement from A.6053 to Alpha Street, Radcliffe.	130,000		Transferred from joint Classified Road Schemes Schedule.	28,399,000
558	A.6053. Diversion from Stopes Road to Blackburn Street Diversion (A.668) Radcliffe.	205,000		Lump Sum for Schemes under £100,000	5,730,000
559	A.6053. Improvement and diversion from Mineral Water Works to Coronation Square, Little Lever.	178,000		Total for Classified Road Schemes. Transferred from Trunk Road Schemes Schedule.	65,581,000
				Grand Total	<u>£101,606,000</u>

(v) MANCHESTER

<i>Ref. No.</i>	<i>Description</i>	<i>Cost £</i>	<i>Ref. No.</i>	<i>Description</i>	<i>Cost £</i>
601	A.560 Altrincham Road. Improvement from Moor Road to Brooklands roundabout.	110,000	616	A.56. Bury New Road Improvement and Diversion, from Salford boundary to Inner Ring Road.	250,000
602	B.5221. Brook Street and Upper Brook Street, widening from Road 17/7 to Plymouth Grove—1st stage.	500,000	617	Intermediate Ring Road: (i) B.6392, from Salford boundary to Cheetham Hill Road. New Road and widening of Elizabeth Street.	1,160,000
603	Link Road 17/7 New road from Chester Road to Fairfield Street.	4,980,000	618	(ii) B.6179 and B.6178, from Queens Road railway bridge to Textile Street. Widening of existing route and new section at Rochdale Road.	5,290,000
604	Princess Road Extension from Denmark Road to Road 17/7.	500,000	619	(iii) New Road from Textile Street to Kirkmanshulme Lane.	1,060,000
605	Princess Parkway Motorway. New Road from Altrincham Road to Cheshire boundary.	1,500,000	620	(iv) B.5220 from Kirkmanshulme Lane to Stockport Road. Widening of North Road and new road from North Road to Stockport Road.	880,000
606	A.5103. Princess Road and Princess Parkway Improvement, from Parkside Road to Altrincham Road—1st Stage of Motorway Scheme.	2,630,000	621	(v) New road from Cheetham Hill Road to Queens Road (Railway Bridge).	260,000
607	A.5103 Princess Road Extension, from Road 17/7 to City Centre Road.	183,000	622	A.57. Hyde Road. Widening. Ardwick Green to Inner Ring Road and to Reddish Lane.	1,930,000
608	A.5079 Kingsway, widening from Moseley Road to Wilmslow Road—1st stage.	400,000	623	Chorlton Road Extension. New road from Road 17/7 to Inner Ring Road.	250,000
609	Cambridge Street Extension, from Chepstow Street to south of Whitworth Street West.	400,000	624	A.62. Oldham Road: (i) New road from City Centre Road to Inner Ring Road.	535,000
610	Hollyhedge Road Extension. New Road from Southmoor Road to Greenwood Road.	100,000	625	(ii) New road from Inner Ring Road to Butler Street.	725,000
611	Sharston By-pass and Altrincham Road Improvement. New Road from Princess Parkway eastwards to Cheshire boundary.	850,000	626	(iii) Widening from Butler Street to Intermediate Ring Road.	755,000
612	A.56. Chester Road Improvement, from City Centre Road to City boundary. Widening and multi-level intersection with Link Road 17/7.	2,150,000	627	(iv) Widening and possible new road from Intermediate Ring Road to City boundary.	1,485,000
613	A.5103. Princess Road and Parkway Improvement, completion of motorway scheme (including section from Denmark Road to Parkside Road).	4,687,000	628	B.5167 Palatine Road. Widening from Barlow Moor Road to River Mersey.	190,000
614	B.5166. Styal Road Diversion, from Gatley boundary to Wilmslow boundary.	167,000	629	B.5221 Upper Brook Street. Widening from Road 17/7 to Hathersage Road—2nd stage.	245,000
615	City Centre Road. New road from Oxford Street to Cambridge Street, westwards to Deansgate, northwards to Albert Bridge and over the River Irwell to Corporation Street including allowance for two-level intersections at Portland Street/Princess Street, and Piccadilly/Newton Street.	10,000,000	630	B.5166. Longley Lane, Park Road and Styal Road. Widening and diversion Sharston Road to Gatley boundary.	116,000
			631	A.5079. Kingsway. Widening from Birchfields Road to River Mersey—2nd stage.	1,260,000
			632	A.560. Altrincham Road Improvement from Moor Road to Princess Parkway.	190,000

<i>Ref. No.</i>	<i>Description</i>	<i>Cost £</i>	<i>Ref. No.</i>	<i>Description</i>	<i>Cost £</i>
633	B.5168. Sharston Road Extensions northwards to Northenden By-pass and southwards to Altrincham Road.	120,000	642	A.662. Ashton New Road and Every Street. Improvement in parts from the Inner Ring Road to the City boundary.	159,000
634	New Link Road 2/6. Rochdale Road to Ashton New Road.	432,000	643	Withington Road, Mauldeth Road West (part) and Hardy Lane. Improvement and diversion in parts from Stretford boundary to Hardy Lane Extension.	—
635	A.635. Ashton Old Road. Widening from Pin Mill Brow to City boundary.	1,600,000	644	Western Parkway. Sale Eastern By-pass to Princess Parkway Motorway.	—
636	B.5221. Princess Street. Widening from Whitworth Street to Link Road 17/7.	450,000	645	Route D/23. New road from Failsworth boundary at Averill Street to Wayland Road.	—
637	Anson Road and Birchfields Road. Widening from Hathersage Road to Moseley Road.	1,300,000	646	B.5217. Barlow Moor Road, School Lane and Manchester Road. Improvement in parts from Stretford boundary to Kingsway.	300,000
638	Cambridge Street and southerly extension forming new radial road. Widening and new sections from Whitworth Street to Barlow Moor Road.	3,305,000	647	Route D/23. New road from Wayland Road to Mauldeth Road West/Princess Road.	—
639	Civic Centre Road. Provision of dual carriageways from Princess Parkway Motorway to Styal Road.	750,000	648	Completion of City Centre Road Scheme. (See Item 615). Widening of Cannon Street, Church Street and Dale Street, new section to Piccadilly, widening of Portland Street.	4,300,000
640	A.664. Rochdale Road. Widening and improvement in parts from City Centre Road to City boundary.	—			58,454,000
641	A.6042, A. 665 and A.576 (part). Corporation Street, Cheetham Hill Road and Middleton Road. Widening and diversion in parts from City Centre Road to Outer Ring Road.	—		Transferred from Joint Classified Road Schemes Schedule.	23,895,000
				Lump sum for schemes under £100,000.	1,058,000
				Grand Total	£83,407,000

(vi) OLDHAM

<i>Ref. No.</i>	<i>Description</i>	<i>Cost £</i>	<i>Ref. No.</i>	<i>Description</i>	<i>Cost £</i>
701	Southern Internal By-pass. New road Mumps to Manchester St.	2,160,000	711	A.669 Middleton Road and West Street:	
702	A.62. Bottom o' th' Moor Improvement, Mumps to Cross St.	185,000		(i) Widening from the Borough boundary to West Street.	
703	A.62. Manchester Street widening from Internal By-pass to Frederick Street.	360,000		(ii) Widening from Rochdale Road to Market Place including junction with Rochdale Road.	
704	A.62. Huddersfield Road widening:			(iii) Market Place Junction.	464,000
	(i) from Cross Street to Ripponden Road.		712	B.6194. Glodwick Road and Cross St. Widening from Bottom o' th' Moor to Abbeyhills Road.	250,000
	(ii) from Ripponden Road to east side of Sharples Hall St.	272,000	713	B.6188. Hollins Road. Widening from Manchester Road to Ashton Road.	425,000
705	B.6194. Shaw Road. Widening from Bottom o' th' Moor to Borough Boundary.	445,000	714	Northern Internal By-pass. New Road from Chadderton Road to Henshaw Street.	202,000
706	A.627 Improvement:		715	A.62. Manchester Street. Widening from Southern Internal By-pass to King Street.	100,000
	(i) Star Inn Junction.		716	A.672. Ripponden Road:	
	(ii) King Street. Widening from Southern Internal By-pass to Star Inn Junction.			(i) Widening from No. 142 to Herbert Street.	
	(iii) King Street and St. Domingo St. Widening from Star Inn Junction to West Street.	264,000		(ii) Widening from Herbert Street to Sholver Lane.	316,000
707	Extension of Southern Internal By-pass to Rochdale Road.	1,400,000			8,610,000
708	A.627. Ashton Road. Widening from Southern Internal By-pass to Borough Boundary.	972,000		Transferred from Joint Classified Road Schemes Schedule.	1,039,000
709	A.627. Rochdale Road from Southern Internal By-pass to Borough Boundary.	100,000		Lump sum for schemes under £100,000.	139,000
710	A.62. Manchester Road. Widening from Frederick Street to Borough Boundary.	695,000		Grand Total	<u>£9,788,000</u>

(vii) ROCHDALE

<i>Ref No</i>	<i>Description</i>	<i>Cost £</i>	<i>Ref. No.</i>	<i>Description</i>	<i>Cost £</i>
751	Motorway link road with connections to Bolton Road (A.58), Queensway (A.664) and extension to Wardle boundary.	3,100,000	756	Bury Road/Mellor Street diversion.	400,000
752	Edenfield Road—Norden Diversion.	275,000	757	Milnrow Road diversion.	900,000
753	Oldham Road and Town Centre Relief Road.	1,500,000		Transferred from Joint Classified Road Schemes Schedule.	7,600,000
754	Whitworth Road diversion.	325,000		Lump sum for schemes under £100,000.	1,000,000
755	Edenfield Road extension to Town Centre.	1,100,000			500,000
				Grand Total	£9,100,000

(viii) SALFORD

<i>Ref. No.</i>	<i>Description</i>	<i>Cost £</i>	<i>Ref No.</i>	<i>Description</i>	<i>Cost £</i>
801	A.56. Bury New Road Improvement.	1,000,000	808	A.576. Broughton Road, Cromwell Road and Great Cheetham Street, Improvement.	1,117,000
802	Irwell Valley Motorway.	8,000,000			14,137,000
803	A.6. Bolton Road Improvement.	700,000		Transferred from Joint Classified Road Schemes Schedule.	13,900,000
804	A.6. Broad Street Improvement.	1,536,000		Lump sum for schemes under £100,000.	200,000
805	A.6. Cross Lane to New Bailey Street Improvement.	576,000			
806	B.5221. New Bailey Street Extension and Improvement.	128,000		Grand Total	£28,237,000
807	A.5063. Trafford Road to Broad Street Improvement.	1,080,000			

(ix) STOCKPORT

<i>Ref. No.</i>	<i>Description</i>	<i>Cost £</i>	<i>Ref. No.</i>	<i>Description</i>	<i>Cost £</i>
851	A.560. Stockport East/West Bypass (Stage II).	1,250,000	857	South-easterly section of Town Centre Ring Road.	465,000
852	A.626. Market Area By-pass.	800,000	858	B.6103, and A.626 (part). Widening of Offerton Road and part of Marple Road. (Under £100,000 scheme).	—
853	A.560. Stockport East/West Bypass (Stage III).	785,000			5,805,000
854	A.560. Stockport East/West Bypass (Stage IV).	600,000		Transferred from Joint Classified Road Schemes Schedule.	5,000,000
855	A.560. Stockport East/West Bypass (Stage V).	1,450,000		Lump sum for schemes under £100,000.	452,000
856	North and North-easterly section of Town Centre Ring Road.	455,000		Grand Total	£11,257,000

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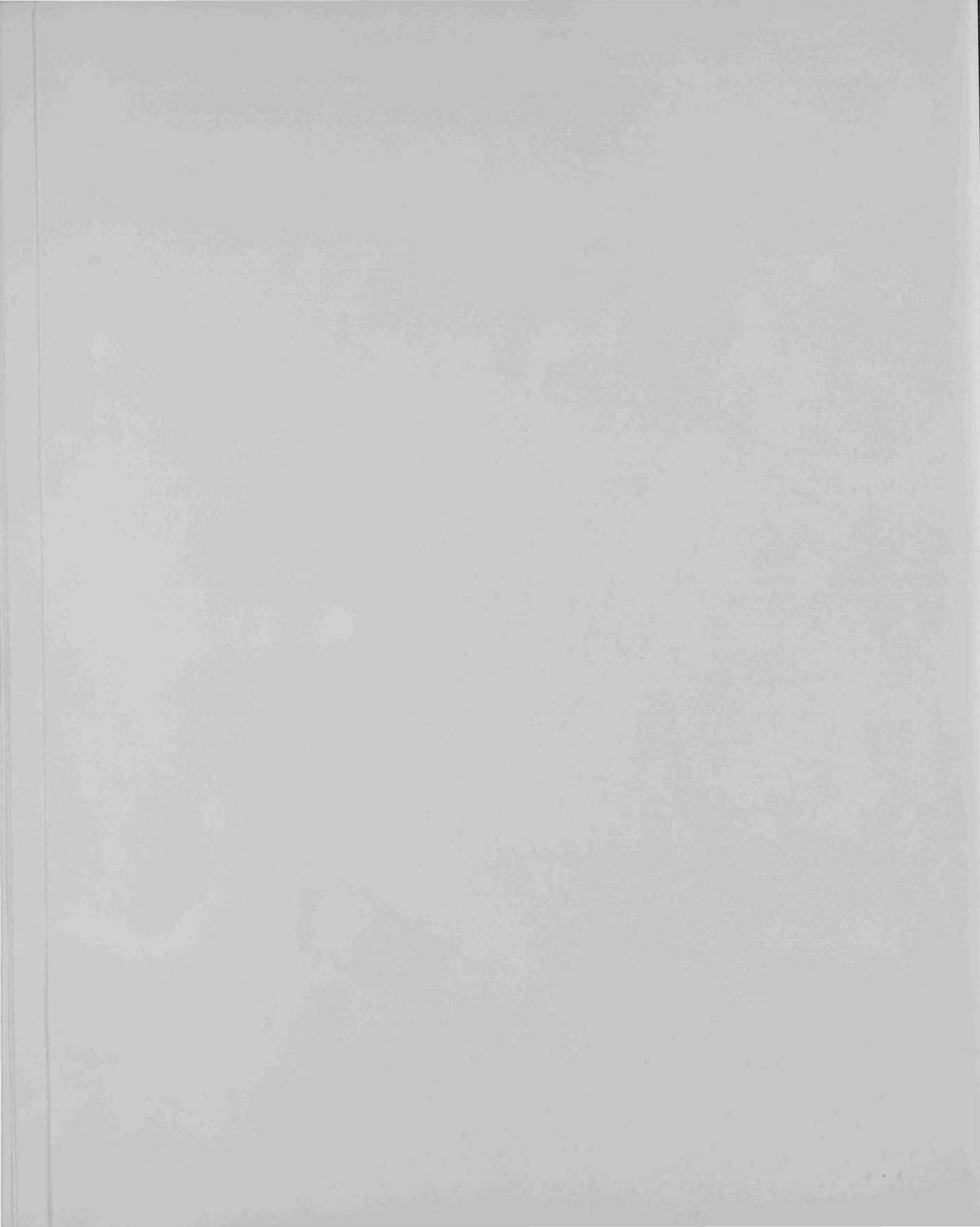
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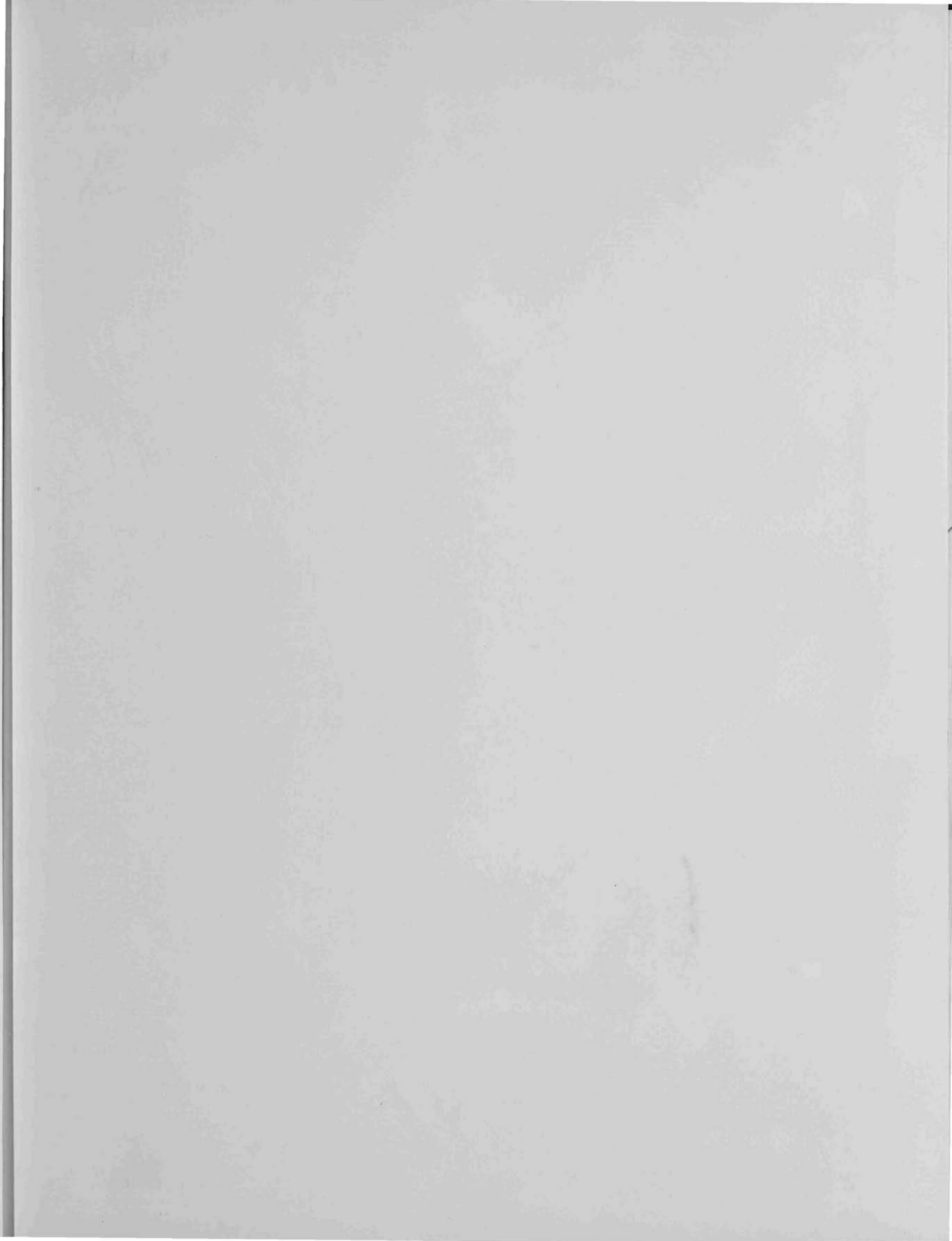
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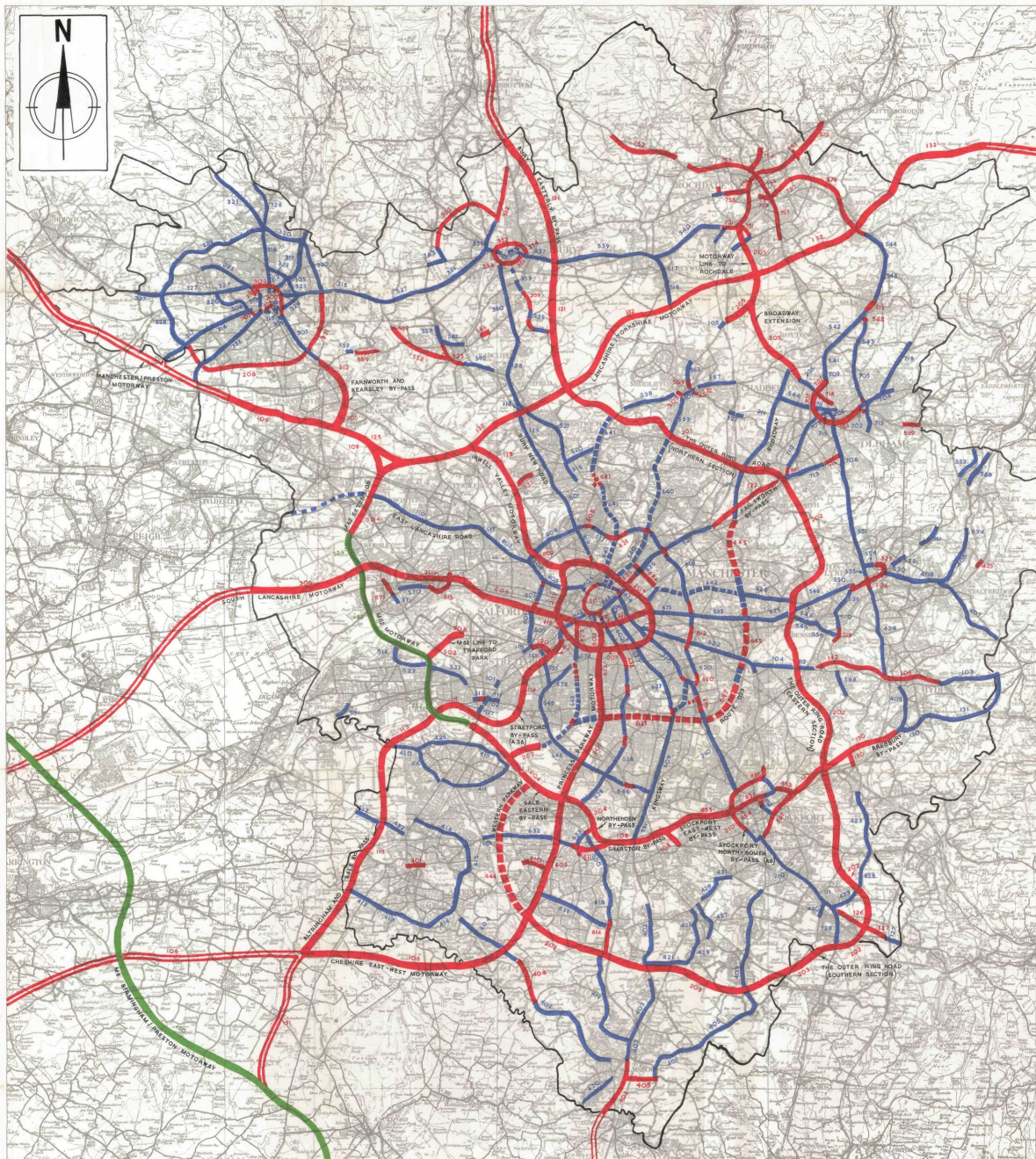
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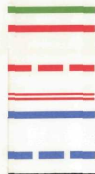
S.E.L.N.E.C.

THE HIGHWAY PLAN



LEGEND

1. MOTORWAYS EXISTING OR UNDER CONSTRUCTION
2. PROPOSED MAJOR ROADS
3. PROPOSED MAJOR ROADS FOR WHICH RESERVATION SHOULD BE MAINTAINED (CONSTRUCTION COSTS NOT INCLUDED IN OVERALL ESTIMATE)
4. CONTINUATION OF MAJOR ROADS NOT INCLUDED IN S.E.L.N.E.C. ESTIMATES
5. EXISTING ROADS TO BE WIDENED AND IMPROVED
6. EXISTING ROADS TO BE WIDENED AND IMPROVED (CONSTRUCTION COSTS NOT INCLUDED IN OVERALL ESTIMATE)
7. BOUNDARY OF S.E.L.N.E.C. AREA



SCALE



